The Electragist

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Easy to Install
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Plates finished to match natural wood or in special colors made to order.

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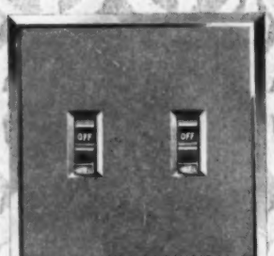

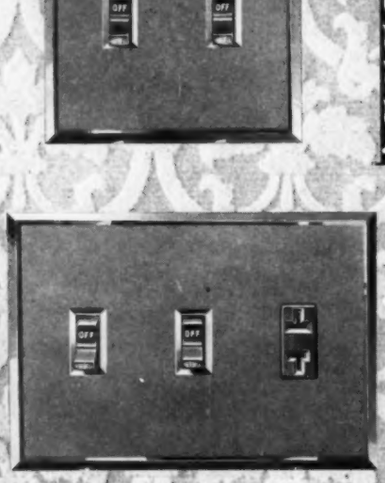

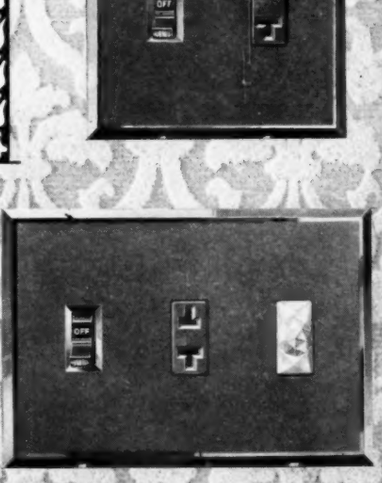

ARTISTIC ∞ TIME SAVING ∞ DURABLE

THE ELECTRAGIST, May, 1927, Vol. 26, No. 7, $2.00 per year, 20 cents a copy. Published monthly at 100 Liberty Street, Utica, N. Y. Association of Electragists—International, 15 West 37th St., New York, N. Y. Entered as second class matter September 1, 1919, at the Post Office at Utica, N. Y., under the act of March 3, 1879.

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The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the
Association of Electragists—International

Vol. 26 MAY, 1927 No. 7

Reasons for Code Divergence Disappearing

Survey of Operations of Electrical Field Service Discloses Efforts to Bring National Electrical Code into Harmony with Progressive Views of Local Administrators

RESPECT for standards received a setback in the years immediately following the war, especially standards that were urged on the basis of "we've always done it that way." Standards of living, of religion, of engineering practice, of manufacture—all were subject to the test of modernism. Among the standards that felt apparent lack of respect was the National Electrical Code. While it generally served as a guide for local regulation, there were fewer and fewer places that were willing to accept the Code without modification. It was losing prestige.

To regain for the Code its position as a "national" code, to minimize Code departures, to build a friendly feeling for the Code was the task the organized electrical industry set for itself early in 1925 when it offered to support an electrical field secretary of the National Fire Protection Association.

Two years ago the first of this month the work got under way with W. J. Canada as the electrical field secretary reporting to the Electrical Field Service Committee of the N. F. P. A. which is made up of representatives of the contributing organization as follows:

Association of Electragists, A. P. Denton.

Electrical Supply Jobbers' Association, T. J. Creaghead.

National Board of Fire Underwriters, George W. Booth.

National Electric Light Association, W. H. Blood, Jr.

National Electric Manufacturers' Association, S. L. Nicholson.

Underwriters' Laboratories, Dana Pierce.

A. R. Small, chairman Electrical Committee, N. F. P. A., and

Franklin H. Wentworth, secretary N. F. P. A., members ex-officio with Mr. Small, chairman of the Field Service Committee.

While the goal was seemingly well defined, the ramifications of the field service work have been constantly broadening. It is the first time that there has been available to the field a central bureau set up solely for the consideration of Code problems and functions, and naturally the scope of this work becomes wider.

The first effort of the field service was to determine the extent and character of local divergencies from the National Electrical Code. It was soon apparent that the Code was fundamentally sound, but that it had certain weak points which had come about largely as the result of the method of revising the Code. Virtually all members of the N. F. P. A. Electrical Committee continue in the Code revision work year after year, and unless they have gone to some trouble to get a viewpoint outside their own they have brought little new thinking to the committee. The insurance inspection divisions had a limited contact through department chiefs, but the municipal inspectors being unorganized on this work had no way of bringing their group thinking to the committee.

It was also obvious that the field considered the Code primarily a fire insurance Code, without regard for how well the equipment would work, or for economy of wiring, provided the work was safe from a fire hazard standpoint.

Then, too, certain ambiguities in the Code had been responsible for some of the confusion and consequent divergence of rulings.

The causes for divergencies naturally indicated the steps to be taken to reestablish the Code as an accepted national standard.

First, the field had to be provided with a voice in future Code revisions. In other words, there had to be some means whereby the viewpoints of the different interests in the field could be pooled and brought to the attention of the proper article committees.

Second, the divergencies from the Code had in large measure been supplemental requirements (a) more clearly defining where certain materials could and could not be used, (b) recognizing

that economies could be effected by using the load factor principle, (c) calling for appliance circuits and (d) in general improving the character of installation. These divergencies would continue until the Code recognized these principles as good practice.

Third, the ambiguities required some one to thoroughly study every part of the Code, suggest clearer statements and where a section or paragraph of one article was contrary to the provisions of another article the two had to be harmonized.

Fourth, where a city was contemplating an ordinance or a revision of one it was necessary to try to prevent it from straying away from the Code.

The removing of the causes for divergent opinion has been the work of the Electrical Field Service Department. There is less tendency today to stray away from the Code while the effort to make the Code in its latest form the basis of all local regulations is apparently making great headway.

From the character and quantity of correspondence between the field and the Field Service Department it is apparent that the field has accepted the department as the clearing house through which its thinking can go to the Electrical Committee.

Clearing House

In acting as this clearing house the Electrical Field Secretary virtually acts as secretary for the several article committees in that the agenda for committee considerations are largely the suggested revisions made by him. In more than one way this is fortunate. It relieves the several committees of the burden of originating changes and places them in the better position of acting as judges. Moreover, with one man intimately acquainted with the details of what each article committee is doing there is less reason for the occurrence of contradictory sections.

This has been a tremendous task for nearly half the total number of paragraphs in the Code were affected by these suggestions. While most of the changes were to secure clarification and consistency there were a number of principles suggested that have required and will continue to require a great deal of consideration before adoption.

In order to prevent the spread of divergencies the Electrical Field Secretary finds himself called upon more and more to attend formal city council and local committee meetings.

The greatest good, however, has undoubtedly come from interpreting the field thinking and field needs to the Electrical Committee. This effort has already resulted in many of these needs finding expression in the 1927 tentative revision for field trial. This effort has rallied the inspection interests around the Code once more and the slogan "Let the Code decide" is becoming popular.

It is doubtful if the article committees as a whole ever engaged in a more strenuous year than they did last year because of the volume of suggestions from the Electrical Field Service Department. Much of the material submitted by the department was thoroughly reviewed and was the basis for the 1927 tentative rules. It was not possible, however, to thoroughly consider all of the proposed changes in one year so that a considerable portion had to wait over another year.

Outstanding Needs

There are nine outstanding field needs which the service department is endeavoring to satisfy. Some of these have already gotten under way and some results have already appeared. The nine needs are as follows:

(1) Nomenclature: There are numerous inconsistencies in the Code, while the use of certain words is not in keeping with field practice.

(2) Where Certain Materials May Be Used: Some guidance is now given, more is found in the 1927 tentative rules and some given by the listings of Underwriters' Laboratories. This insertion of "where" things may be used is considered highly important.

(3) Circuit Adequacy: In order to prevent overloading of circuits within a short time after occupancy it is essential that a sufficient number of circuits be provided. The field is taking it upon itself in not a few jurisdictions to do this.

(4) Special Circuits: Guidance is desired for the provision of special circuits where experience has shown that special devices will be needed.

(5) Economies in Copper: (a) Feeders and Neutrals: The field is trying out numerous different ways of applying load factor. The Code should lead in order to secure a conservative recognition of economy consistent with safety.

(b) Motor Conductors: The first of a series of motor wiring tables appears in the 1927 tentative revision and more are under consideration. By recognizing certain engineering principles it is known that considerable saving in conductor cost will result without any reduction in safety.

(6) Meaning of "Approved": An effort was made in the 1927 tentative revision to clear this up by making the local inspector responsible. This, however, is not satisfactory to the field. The local inspector wants a national guide.

(7) Advanced Guidance: The rapidity with which wiring becomes insufficient and inadequate, due to the increasing use of electrical service, has made the field look for some advance guidance by which local requirements might be set up.

(8) Details: The demand for sufficient details to make the rules more explicit must be met. Today the generality of the Code brings conflict of opinion and judgment. It is believed that much of this detail can be supplied through tables or charts and without unduly lengthening the Code. The field, however, is not so much concerned with the length of the Code provided it is explicit.

From the accomplishments to date it is apparent that in another year or two the National Electrical Code will more clearly reflect the point of view of those who are entrusted with its administration.

1/1,000,000,000 Ampere Operates This Tube

A tube so sensitive that it operates on one-billionth of an ampere has been developed by an engineer of the Westinghouse Electric and Manufacturing Company, D. D. Knowles. This device is more sensitive than anything yet developed in electrical research, and is called the grid controlled glow discharge tube. It is so sensitive that a human hand placed near a grid plate is sufficient to operate it. Several important commercial applications have already been assured the new tube.

Among these uses are fire protection, where smoke or flame would operate it; to operate a burglar alarm, flame control for gas furnaces as a signaling device in case of failure of the pilot light; in automatic gauging of tanks containing fluids.

An Interesting Large Conduit Installation

Unusual Density and Complexity of Conduit Work in the Hudson River Vehicular Tunnel Bring to Light Economical Methods of Designing and Making Bends in All Sizes of Pipe

DURING the summer of 1927 an outstanding engineering achievement will be completed and thrown open to the public—the double-tube vehicular tunnel connecting New York and Jersey City under the Hudson River, known as the "Holland Tunnel."

One of the most important requirements of the tunnel is ventilation, as can be readily understood from the fact that at full capacity 3,800 motor vehicles per hour will belch forth poisonous gases. Another important consideration is that the tunnel is intended to be a permanent structure. Therefore, the two main considerations for all equipment were reliability and permanency. These requirements are reflected in the specifications of all the component parts, and appear also in electric conduit installation.

The conduit installation has a complexity and density that is usually found only in generating stations and sub-stations, as can be seen in Fig. 2. Due to restricted space available a large number of bends had to be made in all sizes of pipes, the largest of which was 4 in. In order to subject the cables to the least possible strain while drawing them in, large-radius bends were specified wherever possible. The illustrations clearly show this. The radius of most bends was specified on the drawings. Only in cases where absolutely necessary were short-radius manufactured elbows used. Another noticeable fact is that bends in a common plane have a common center, or in other words the inside radius is the smallest and the outside the largest, all having the same center. This arrangement saves space.

Stringent Specifications

The following are extracts from the pipe and conduit specifications:

"All pipe shall be butt or lap welded, hot dipped galvanized, and shall have a smooth surface free from injurious rust, mill scale, sand marks, cracks, laminations, blisters, cinder patches or imperfect welds, or any other defects which would affect its strength or cause corrosion. It shall be free from bends, kinks, buckles and evidences of injury in manipulation or unequal contraction or cooling. Ordinary liquor marks, incident to manufacturing of welded material, shall not be cause for rejection. All pipes shall have the ends smoothly and squarely cut and all burrs removed by reaming or otherwise. Both ends of each length of pipe shall be threaded to fit pipe couplings with standard taper threads. All threads shall be full and clearly cut. The axis of the threads shall correspond with the axis of the pipe and no appreciable shoulder shall be left after threading.

"The term 'galvanized' means coating the surface of the iron or steel with zinc by processes generally known as the hot dip process or the electro-galvanizing process. The galvanizing baths shall contain pure zinc only without the mixture of any other metal. Metal to be galvanized shall, after being thoroughly cleaned, pickled, and dried, be evenly and heavily coated with zinc, which shall be free from buckles, blisters, pin holes, ragged edges or other defects. Galvanizing shall not be done until the articles to be galvanized have been completely fabricated. Samples of galvanizing shall successfully withstand four consecutive immersions of one minute each in a solution of copper sulphate crystals having a specific gravity of 1.186 plus or minus .003 at 65 deg. Fah. (18 deg. C.) This test shall be conducted by the methods outlined for the Preece Test under serial designation A 90-24.

"Conduits for electric wires—the inside shall be further protected by a coat of approved enamel.

"All conduits shall be threaded before galvanizing and shall have such allowance in the threads as will permit them to be screwed together after galvanizing without recutting the threads.

"The electric conduit shall bend cold ninety degrees about a radius equal to ten diameters without flaw of fracture.

"All threads cut on conduit while being placed shall be given a coat of rust inhibitive zinc paint. All free ends shall be threaded and capped, and all connections shall be watertight.

"Bends and offsets may be made on the work if proper tools are used, but in no case shall deformed, split or crushed conduits be used. All bends shall be of as large a radius as possible. Not more than two right angle bends shall be made between any two outlet boxes, unless permitted by the engineer."

One contractor, the Erickson Engineering Company of 452 Lexington Avenue, New York, N. Y., installed the conduit work, while Fischbach & Moore, Inc., 222 East 42nd Street, New York, are performing the finishing work. Because the work was separated in this manner a test was made of each conduit run to assure all parties concerned of

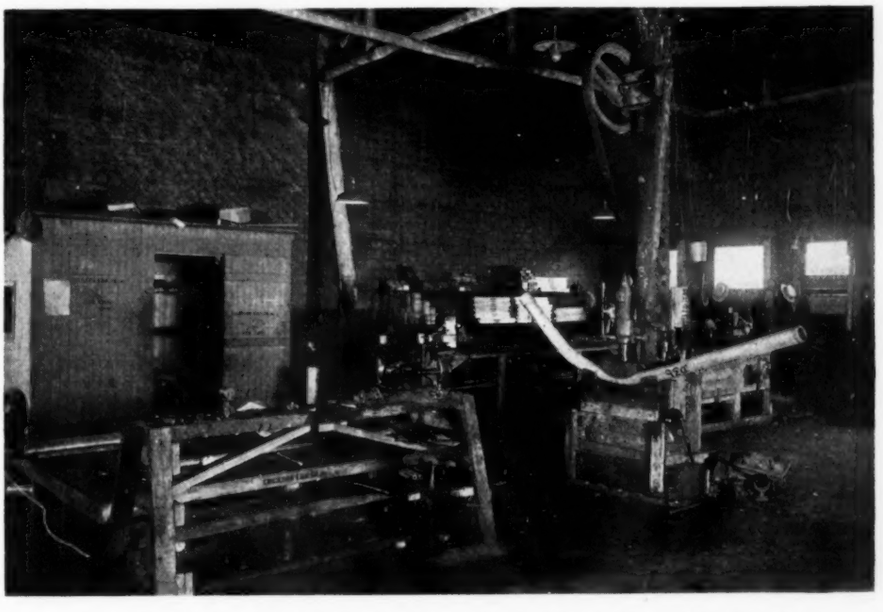


Fig. 1—The shop, showing the bender, radius table and threading machines

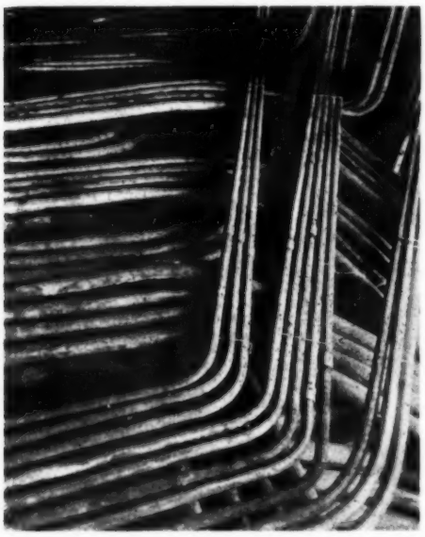


Fig. 2—Some of the conduit installed in the control room floor

its condition to receive the intended contents.

The methods described, with the exception of those incorporated in the specifications, are those of the Erickson Engineering Company.

Because it was intended to split the work among several contractors, very carefully prepared drawings were supplied by the Tunnel Commission of New York and New Jersey. Each run was numbered, and the terminations were located by dimensions.

Conduit Test

After the iron conduits were installed it was required to test and clean each run by dragging through three wires each 20 ft. long. The wire sizes in each case were the largest permitted by the National Electrical Code for that particular size of conduit. At the time that the test wires were pulled through a heavy cord was pulled in, which terminated at each end of the run in a brass tag on which the conduit number was stamped. A different method of cleaning the fibre conduit was used on account of the possibility of concrete seeping in at an imperfect joint, hardening and forming abrasive edges. A flue cleaner, such as used for cleaning boiler flue tubes, was dragged through each run of fibre conduit. A rope was attached to each end so that it could be pulled back and forth over a rough spot and thus wear it down. A tagged cord was also left in each run.

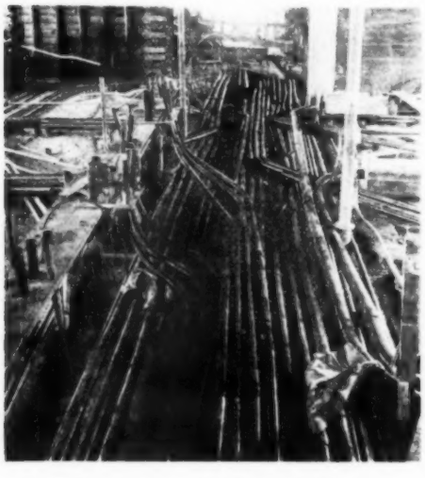


Fig. 3—A bank of fibre conduit

Fibre conduit was used for high-tension wiring and where single conductors carrying alternating current were run. The type used was that having a drive joint. The fibre conduit as a rule was run in the concrete floor slab and the steel conduit in the center concrete floor fill. The bends in fibre conduit were, of course, made at the factory to specifications.

Bending Steel Conduit

As can be readily understood the bending of large steel conduit was one of the major problems and it is not surprising that considerable study was given this subject. Fig. 1 illustrates the bending equipment, with a large size bend in the process of fabrication in the bender.

All bends from 2 in. up were made by means of a hydraulic bender in the shop, the smaller sizes were bent on the job by hand with a hickey, except the 1½ in. bends, of which there was a large number. These were bent by hand by two men around a wooden form having three radii, namely, 18 in., 24 in., and 36 in.

The large bends were bent to match a chalk line laid out on a radius table. This table can be seen in the lower left-hand corner of Fig. 1 behind the threading bench. The table is about one foot high and consists of 2 in. planks nailed to a strong wooden frame. Inasmuch as most of the bends had a radius under 8 ft. the table was made 8 ft. square. For convenience in laying out the surface is divided into one-foot squares by deep score marks.

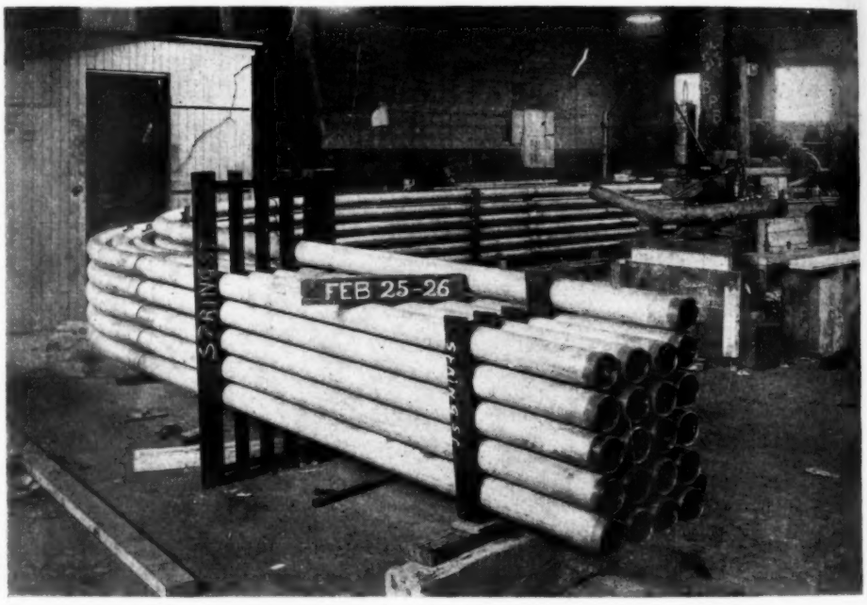


Fig. 4—A bank of twenty-one 3½-inch conduits bent to close dimensions

The bender consists of a 30-ton hydraulic jack with the plunger designed to receive various curved and grooved forms for each size pipe. The reaction supports are also curved and grooved, a pair for each size of pipe. The compression medium is a mixture of alcohol and glycerine. The pump is designed for manual operation. It was soon found, however, that the constant pumping was very fatiguing to the workmen, so the power drive shown in Fig. 1 was rigged up. It consists of a counter-shaft with a large wooden pulley on one end driven by a ¾ h.p. motor, and a crank at the other end. The crank was connected to the pump by means of a wooden connecting rod. This arrangement gave the pump about 200 strokes per minute.

The procedure in bending pipe is as follows: The bend is laid out on the radius table, the relation of the bend to the ends of a length of pipe having been determined on the job. Sometimes where very accurate fitting was required a templet was made on the job with a hickey out of a piece of small pipe or reinforcing rod, and this was used instead of the chalk line on the

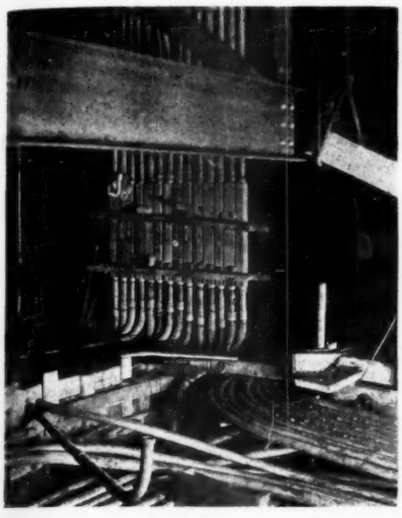


Fig. 5—The elongated conduit fittings

radius table. Before any bending was done a straight chalk line was drawn on the pipe from end to end parallel with the axis. This line was used to indicate the top of the pipe, and was used to keep in a plane the large number of small "sets," of which the completed bend consists. Along the side of the pipe there were marked the beginning and the end of the bend, and the space between marked at about 2-in. intervals. These marks can be seen on the pipe in Fig. 1 between the supports and under the plunger. The first set is made at the first mark with two or three pump strokes, then another set at the next mark about 2 in. farther along and so on until the last mark is reached. Usually more than one pass is required. On the first and third or other odd passes the sets are made on the marks; on the second, fourth and other even passes they are made between the marks, thus distributing the sets so that no sign of them appears, and the result is an unbroken, continuous curve, very closely approximating the arc of a circle.

Accuracy of Bend

Fig. 4 shows how accurately large pipe can be bent. The illustration shows a bank of twenty-one 3½-in. conduits bent concentrically. The accuracy will appear when one notices that ½-in. flat steel spacers run vertically through the bank, while ½-in. round steel rods run through the bank horizontally. The entire bank of conduit was assembled in the shop as the illustration shows.

The closest to the end of a pipe that a bend could be made with the hydraulic bender was 16 in.

One man was required to operate the bending machine. One or two men were required to manipulate the pipe, the larger number being needed for the heavier size or for especially difficult compound bends.

Considerable skill is required to make a perfect bend. The usual error that an inexperienced operator makes is to bend too much in one pass, making it necessary to take some of the set out, which often results in flattening the circular cross action. The separation of the two reaction supports is also a matter of experience. For large pipe they are set farther apart than for smaller. Or when comparing the spacing on one size of pipe the closer spacing will result in a coarser bend.

Large pipe was cut and threaded in the same shop where the bending was done. Cutting was done manually with a hack saw, but the pipe was marked with the cutting tool on the threading machine to guide the workman in making the cut square. Threads up to 1½ in. were cut on a motor-driven Armstrong No. O-B threading machine, and up to 4 in. on a motor-driven No. OO machine.

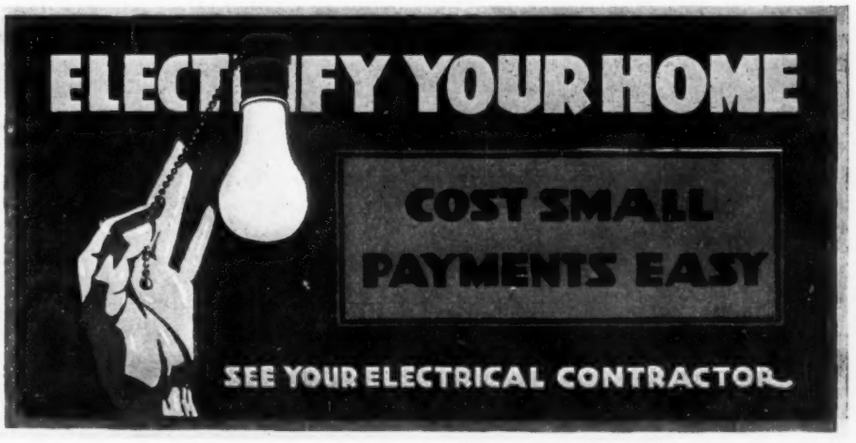
Openings for Pulling

To facilitate the pulling of cable, the majority of which is lead-covered, openings were provided in the conduit runs. These were not in the form of ordinary pull boxes, but are greatly elongated conduit fittings. This eliminates the hazard that the entire contents of a pull box is subject to in case of a short circuit on one set of conductors. Fig. 5 shows the long conduit fittings in the vertical run in the background.

The tunnel is being built by the New York State Bridge and Tunnel Commission and New Jersey Interstate Bridge and Tunnel Commission under direction of Ole Singstat, chief engineer, and J. N. Dodd, electrical engineer.

Boston Utility Further Aids Contractors

THE Edison Electric Illuminating Company of Boston, which recently inaugurated in connection with its Relations with Allied Interests Department a Dealers' Service branch created to afford a window-trimming service to contractor-dealers, has started an advertising campaign in the street cars of cities in its territory urging the wiring of homes. On these car cards the words "See Your Electrical Contractor" are printed, and on practically all of the advertising carried by the company the same reference is made.



J. J. Caddigan, superintendent of the department, says that over one hundred and fifty contractor-dealers' windows have been trimmed by the new service, and the company has received many letters from the field complimenting it.

Exhibit an Important Feature of Electragist Convention

Many Manufacturers Will Display Their Products at the Association's Twenty-seventh Annual Meeting in St. Louis

THE manufacturers' exhibition to be held in conjunction with the twenty-seventh annual convention of the Association of Electragists, International, during the week of August 8 at the Hotel Chase, St. Louis, Mo., will afford contractor and contractor-dealer members in attendance an opportunity to see and become acquainted with the latest developments that have appeared during the year in the wiring and appliance fields. The manufacturers who have taken space for the exhibit include among their products wire and cable, armored cable, conduit, conduit fittings, porcelain products and fittings, asbestos products, switches, switchboards, fuses, expansion bolts, lighting equipment, porcelain lighting units, glassware, decorative posts and brackets, portable and desk lamps, radio equipment, appliances and household units, fans, motors, etc.

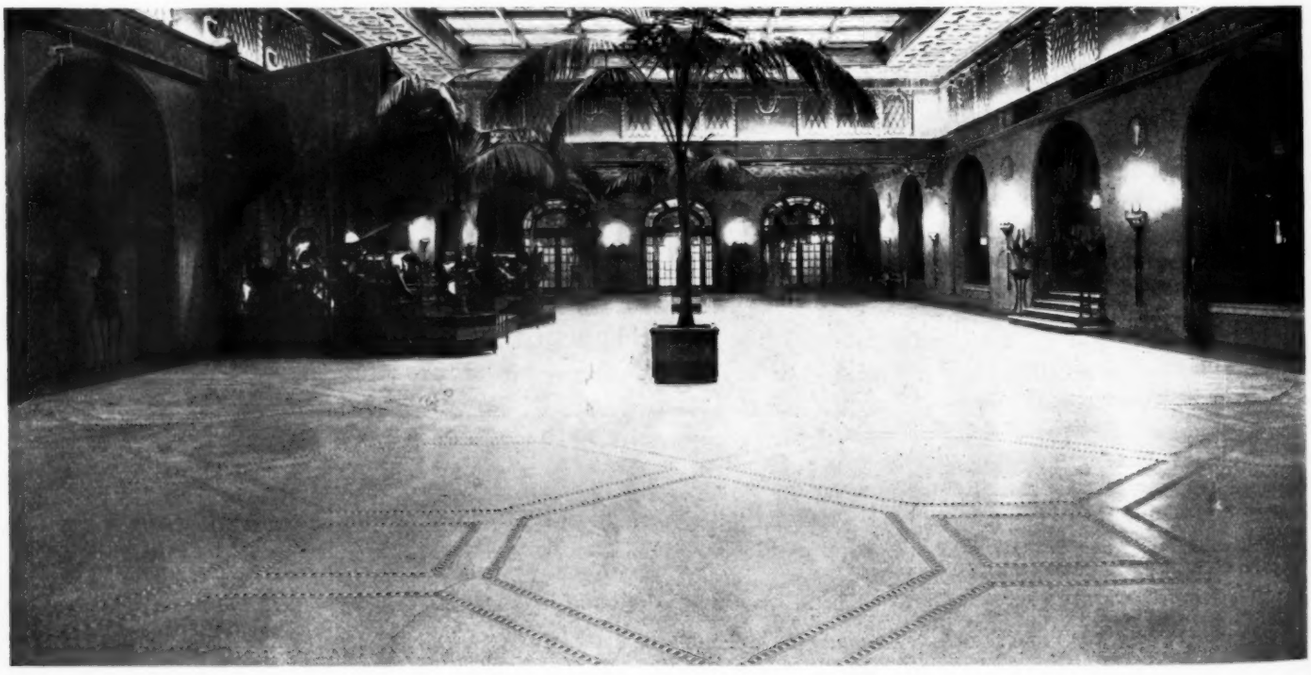
The exhibition will be held in the Palm Room of the Hotel Chase, which is one of the most beautiful exhibition halls in the country. It is directly connected with the Convention Hall, where the business sessions will be held, by glass doors which can be closed during convention periods, permitting of smooth operation of both features.

A noteworthy feature of the exhibition will be the installation of a public-speaking system in the convention hall with loud speakers located at the end of the exhibition hall. This will permit the manufacturers' representatives in charge of the booths to remain at their posts and at the same time to hear the address of the outstanding speakers who will make up this year's convention program. In former years those at the booths were deprived the opportunity to hear the convention sessions, and this innovation will enable them to follow the convention sessions while outside the hall.

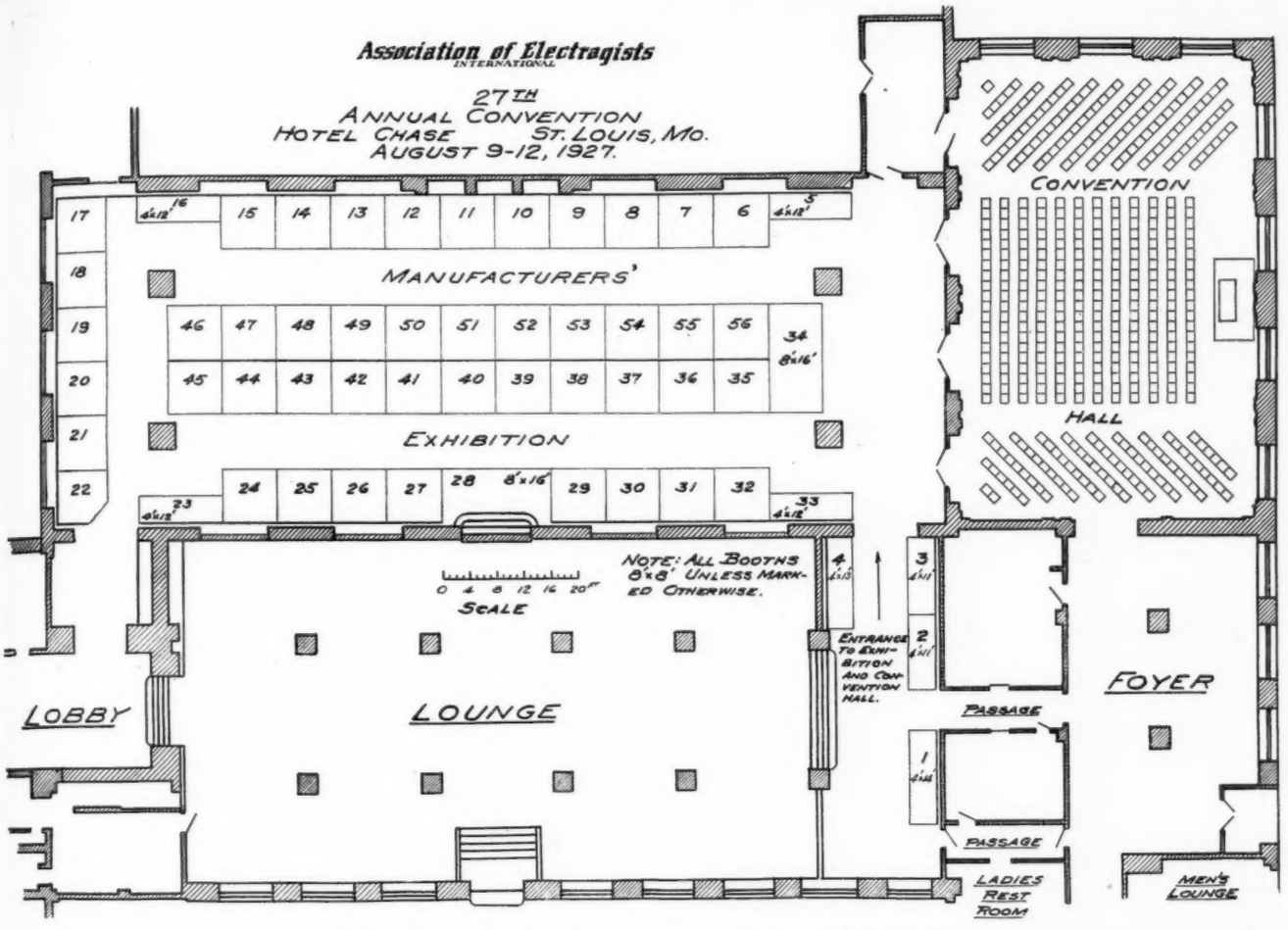
The Palm Room is about 140 ft. long and 50 ft. wide. It will be provided with fifty-six exhibition booths laid out in the manner shown on the diagram on the opposite page. The same number of booths was arranged in former years, but advance indications of the interest on the part of manufacturers point to its being inadequate to take care of the volume of applications that are being received for this year's show. There were a number of disappointed applicants for space last year, indicating that the manufacturers' exhibition held each year at the Electragist convention has become an outstanding feature in the year's calendar of exhibitions that manufacturers desire to patronize.

Exhibit Benefits Contractor

The exhibition has become an important event for the contractor and contractor-dealer as well as for the manufacturer. To the Electragist it is a place



The size and attractiveness of the Palm Room of the Hotel Chase can be seen from this illustration. The booths will be on the two sides of the room and along the lower end, with a double row down the center of the room



This diagram shows the layout of the booths of the manufacturers' exhibition and indicates the relation of the Palm Room to the lounge, foyer and convention hall

where he can obtain at first hand not only the newest ideas on materials, devices and appliances, but he can also make direct contact personally with the executives and representatives of the principal manufacturers of the industry. This makes possible the formation of arrangements for handling profitable lines which may be worth many times what attendance at the convention has cost the Electragist.

The Manufacturers' Exhibition Committee which has charge of the plans for the exhibit at the Hotel Chase is headed by William G. Campbell, manager of conduit sales, Central Tube Company, who has been chairman of the committee for four years. Serving with him are: J. O. Weatherbie, eastern merchandise manager, General Electric Company; Samuel Adams Chase, special representative, Westinghouse Electric and Manufacturing Company; M. A. Oberlander, wiring supply sales manager, Graybar Electric Company; Dwight R. G. Palmer, director of sales, Safety Cable Company, and Martin J. Wolf, sales manager, Bussmann Manufacturing Company.

Make Your Reservations Early

The committee in charge of arranging hotel accommodations for the visiting Electragists and their guests has issued a request that those who are going to make the trip to the convention send in their reservations early. Four hotels situated near the Hotel Chase, where the convention is to be held, and the Hotel Chase itself, have announced their rates for the period of the convention.

Hotel Chase
- Single Room, $4, $5, $6
- Double Room, $6, $7
- Suites, single, $10; double, $12

Forest Park Hotel
- Single Room, $3, $3.50
- Double Room, $4, $5
- Suites for five persons on same basis

Fairmont Hotel
- Single Room, $3, $5
- Double Room, $3, $4, $5

Coronado Hotel
- Single Room, $2.50, $3.50
- Double Room, $4, $5
- Suite for three, $9
- Double suites, $7.50

Buckingham Hotel and Annex
- Single Room, $3, $3.50, $5; without bath, $2.50
- Double Room, $6; without bath, $4

The Forest Park, Fairmont and Buckingham hotels are all within a block of the Hotel Chase, and the Coronado is located only a few blocks away. There is regular bus service passing the doors of both the Chase and Coronado hotels, and in addition the management of the latter offers free bus service to the Chase and return if sufficient number of visitors register at his hotel.

The men in charge of hotel reservations would like to have the applications for reservations come in as soon as possible in order that the actual assignment of the rooms may be made on July 1 and the applicants notified of rooms assigned to them.

Metal Protected Wiring

ASSOCIATIONS may pass resolutions, but it is the action and thought of the members in their own communities that count. National associations are supposed to reflect the thinking of their constituents and if they, individually or collectively, undertake certain activities in a sufficient number of places their national association, irrespective of what it may do or say, is in the minds of the rest of the industry more or less responsible.

Such a situation has developed with respect to what has been popularly known as "All-Metal" wiring.

When the Association of Electragists, International, first set up its metal protected wiring program it was proposed that it eventually apply to all classes of construction. Metal protection was defined as being: Rigid conduit, flexible metallic conduit, metal raceway or armored cable. It was never defined by word or by inference as being rigid conduit only.

TWO years ago the A. E. I. Executive Committee. after reviewing what had been accomplished, came to the decision that metal protection was not economically sound as a requirement for all classes of occupancy. Accordingly the Association modified its program to the extent of clearly defining the places for the use of metal protection as

(1) All buildings of whatever sort situated in a fireproof building zone.

(2) All buildings which by nature of their occupancy must have the maximum protection against fire such as hospitals, schools, theatres, all buildings where large numbers of people congregate at one time, factories engaged in processes which are highly inflammable, garages.

Since that time the Association of Electragists has repeatedly in THE ELECTRAGIST, in other electrical papers, by letter, by word of mouth and otherwise, gone on record as recognizing that certain classes of wiring for economic reasons are best suited to certain classes of construction.

Nevertheless, there are those in the other branches of the electrical industry who cannot (and perhaps rightly so) accept these statements of the Association of Electragists as being representative when they find local organizations of electrical contractors, some of whom are electragists, striving to limit all wiring in their own communities to metal clad and even at times to rigid conduit only.

THE Association of Electragists did not modify its original stand under pressure, but only because after considerable study it was convinced that under the present state of the art there was no safety or economic justification for urging the use of metal protected wiring in all classes of construction everywhere. When the wage rates locally reach the point where certain forms of metal protected wiring cost the same or less than other forms of wiring, economic law will function.

Contractors and electragists are urged to be guided in local activities by the policies evolved by their national association as sound and capable of being received favorably by the industry and the public. When local organizations insist upon going beyond these policies they will almost invariably find other forces arrayed against them to the point where they will lose even that which they might have won. The Association of Electragists, moreover, can offer no assistance in cases where local activities are clearly out of line with nationally established policies.

As stated in the recent resolution of the A. E. I. Executive Committee, the phrase "All-Metal" has undoubtedly been too embracing and accordingly it has been decided to drop the word "all" when speaking of metal protected wiring.

How Much Protection Does Mechanics Lien Afford the Sub-Contractor?

By LEO T. PARKER,
Attorney-at-Law, Cincinnati, Ohio

THE improper application of a mechanics lien may oftentimes put a contractor in the red ink for the year. Nevertheless, many electrical contractors are none too familiar with their lien rights and find themselves helpless when an emergency arises, though a little foresight would have enabled them to avoid the pitfall. Mr. Parker points out in this article under what circumstances a sub-contractor can expect a mechanics lien to protect him.—Editor.

GENERALLY speaking, all persons who perform labor or supply material for the construction, alteration or repairing of real property may assert a mechanics lien to secure the payments. Recently a higher court in effect said that the important requisite to entitle a person to a mechanics lien is that it must be proved that a contract exists by which the property owner, or leasee ordered the work done.

However, it is important to know that it is not necessary for the particular finished structure to be in the minds of the parties when the contract is made. But the structure must be completed in accordance with the plans and specifications, where the latter are a part of the contract.

Also, it has been held on numerous occasions that a person is not entitled to a mechanics lien where he sells material to the owner of property, with no understanding as to where and how it shall be applied. Generally, under these conditions the seller must trust to the responsibility of the buyer to obtain payment for the material. Of course, the person who furnishes material under these circumstances may institute legal proceedings against the property owner and recover a judgment for the amount of the account, which, when properly recorded, is a legal lien on the property owned by the purchaser.

Where an owner, contractor or subcontractor purchases material on credit and represents that it is to be used in a specified building, he is liable to a heavy fine if he causes the material to be used in any other building without the consent of the person from whom the material was purchased.

Duty of Persons Receiving Money

When any money becomes due from the owner, part owner, leasee, or contractor, or when the contractor desires to draw money on the contract, the person who receives the money should render a statement giving the names of all workmen in his employee who have not been paid in full, and when logical the names of all subcontractors, and other persons furnishing machinery, material or fuel should be listed, together with the amount of money due them.

It is the duty and legal requirement of the owner to retain a sufficient amount out of any money due or to become due to the principal contractor to pay all accounts that are due or to become due to the subcontractors, laborers and material men. If the owner fails to do so, he is liable.

Validity of Liens

A mechanics lien generally is effective from the day the first work was performed, or the first material was furnished by the contractor under the original contract. Moreover, the laws give mechanics liens the preference to all other titles, liens, or incumbrances which may become effective after the constructional work was begun. Generally, homestead exemptions are not valid against a mechanics lien.

But a mechanics lien may be rendered void under various circumstances. For example, where a lien had been filed and the owner notified the person holding the lien to sue on it, the Court held the lien forfeited because the suit was not commenced within a reasonable time.

In view of the fact that considerable litigation has resulted where the validity of mechanics liens have been unintentionally wholly or completely effected, a review of the leading cases involving these points probably will convey the desired information more readily than mere explanation.

Extension of Credit

Contrary to the opinion of a majority of persons, a mechanics lien is not made void where the holder takes a promissory note or other security for the debt, unless there is a written agreement between the owner of the property and the holder of the lien by which the latter agrees to waive his rights of lien.

The law is well established that the mere extension of short term credit is not a complete waiver of the contractor's right to a mechanics lien. However, where credit is extended and payment of the debt is specified at a time when the statutory period of the lien has run out, then the contractor loses the right to the lien.

For example, where a contractor accepted a note from the owner of a building for the installation of lighting fixtures, the court held the right to the mechanics lien was waived up to the time the note was due.

In another case, quite recently decided where the same point of the law was involved, the court said that "the taking of a promissory note, or other evidences of indebtedness for labor performed, or skill, material, or machinery furnished, * * * * * shall not discharge the lien unless * * * * especially received in payment therefor (the lien), and so specified in the note."

In still another case, the court said "the taking of a promissory note for a debt already due suspends the right of action to collect it or to take action to enforce any lien that secures it until the maturity of the note."

Therefore, where a contractor accepts a note or extends credit, he does not lose his right to a mechanics lien,

but he waives his right to enforce the lien until the note or other form of payment matures. After this time, if the debt is not paid, the mechanics lien is equally as effective as if the credit had not been extended.

Waiving Right

At various times there has been considerable discussion as to whether or not a contractor may legally waive his right to a lien. The law is well established that an agreement is valid by which a contractor waives his lien.

For example, various courts have held mechanics liens waived where it was specified that the contractor "is not to file a lien," or that "he is not to file a lien under the lien laws of the State," or if he agrees "not to suffer or to permit a lien to be filed," or if he gives a bond that no lien shall be filed, or in any other way clearly indicates that the intentions of the parties are that no lien shall be filed.

On the other hand, where the terms of the contract between the parties were not clear on the question the courts have held that the doubt is resolved in favor of the contractor or holder of the lien. And unless a contractor clearly indicates that he waives his rights to a lien, the right to the lien is not lost.

In another case it was disclosed that a contract specified that a contractor was to complete the installation of lighting fixtures "free from all claims, leases, and charges." This clause in the contract was held to mean that the contractor guaranteed that the original work specified in the contract was to be free from any lien but it was held not to affect extra work ordered by the owner.

In litigations involving the validity of a mechanics lien the burden is upon the owner of the property to prove that the lien has been waived. The intentions of the party are determined by the language of the agreement and all other circumstances surrounding the case.

In one case it was shown that a contract provided that the contractor would "find, provide, and deliver, free from all claims, liens, and charges, whatsoever, all and every kind of material and labor which might be necessary and proper for the complete execution." This language was held sufficiently clear to indicate that the parties intended to waive the lien.

However, in another case where a building contract specified that "the owner will not in any manner be answerable or accountable for any loss or damage that shall or may happen * * * * * or for any of the materials or other things used and employed in furnishing and completing the same work," the court held that the validity of the contractor's lien for the labor and materials was not affected.

In still another case the litigation involved a contract which specified that the contractor agreed to furnish "a full and perfect release which may lie" against the building. The court held this provision did not affect the contractor's right to a valid mechanics lien.

Subcontractors

Generally speaking, a subcontractor is not entitled to the benefits of a mechanics lien where the principal contractor has agreed in the building contract to waive his rights to a lien on the property for the work and material supplied. (162 Pa. St. 153.)

In other words, the courts hold that where the building contract, between the owner and the principal contractor, specifies that rights to mechanics liens are waived, it is the duty of subcontractors to read and know the provisions of the principal contract.

As a matter of fact, a court recently held a statute invalid which provided that "the lien of a sub-contractor shall not be affected by an agreement between the owner and the principal contractor. (55 O. S. 453.)

In another case, where practically the same point of the law was involved, the court held a statute invalid which provided that a subcontractor was legally entitled to file a lien for furnishing labor or material, irrespective of the contents of the contract existing between the owner and the principal contractor, and further that the lien of the sub-contractor should not be waived, unless he agreed in writing to relieve the owner of all lien. (148 S. E. 337.)

In this case, it is interesting to observe that the court said:

"The rules are well settled * * * that a contractor who has waived a mechanics lien by a stipulation in writing is bound by such agreement, as well as by other agreements he may make, and a mechanics lien filed in violation of such agreement is invalid."

Good Faith Required

However, the relation between the owner and the principal contractor must be in good faith, otherwise the subcontractors are not bound by the provisions of the building contract.

For instance, in a recent case it was shown that a building contract contained a stipulation waiving the rights to mechanics liens, and that the stipulation was made a part of the contract expressly for the purpose of defrauding the subcontractors. In this case the court held the sub-contractor not bound by the agreement, although it was specified in the original contract and brought to the notice of the subcontractors, that the principal contractor waived his right to lien.

But it is important to know that, where good faith is proved to exist, the agreement between the owner and the principal contractor, by which the latter waives his right to a lien, need not be in writing, as a verbal agreement is binding on subcontractors if convincing evidence is introduced to prove the agreement of all parties was valid and the subcontractor was informed of it.

On the other hand, a sub-contractor is not bound by an agreement which exists between the owner and the principal contractor, unless the subcontractor has notice of the agreement in some definite manner. For illustration, where a verbal and secret agreement was made by a property owner and the principal contractor, the court held the sub-contractors not bound.

In another recent case it was disclosed that a property owner and a principal contractor entered into a verbal agreement, whereby the latter agreed to waive the rights to mechanics liens for the work performed and the materials supplied. Later the owner and the contractor entered into a written contract which contained a clause that did not plainly state that the principal contractor waived his rights to the liens, although the language indicated that intention. The court held that the subcontractors were not bound by either the verbal or written agreement, because the verbal agreement was not brought to their notice, and the written agreement was not clearly explained.

Electrical Products of 1925 Valued at $1,540,002,041

Department of Commerce Announces in Its Biennial Census of Manufactures an Increase of 19.1 Percent Over Figures for 1923

THE biennial census of electrical manufactures which was issued by the Government on April 23 shows a total value of electrical goods manufactured in this country during the year 1925 of $1,540,002,041, an increase over the total for 1923, which was $1,293,001,771, or more than $247,000,000.

Some interesting facts are brought to light by an examination of the figures under the various heads. The large table at the right contains the totals under the different heads, the various articles making up the totals being omitted.

Under interior conduits and fittings a total figure of $43,328,140 is shown. This is portioned among five components, which are listed below, together with their individual totals. The figures for 1923 are not available so no comparison can be made.

	1925
Armored conductor and fittings	$10,906,375
Flexible steel conduit, and elbows and couplings	1,197,478
Rigid steel conduit	16,874,284
Non-metallic conduit	3,554,986
Metal raceways and outlet boxes, lock nuts, bushings and fittings	10,795,017

This table indicates that the value of rigid steel conduit, together with elbows and fittings, represented almost $6,000,000 more than that of armored conductor and fittings, and were more than $6,000,000 higher than the figures for metal raceways, which include all kinds of outlet boxes.

While there was an unprecedented building boom in this country during 1925, an interesting fact is brought out by the census that the value of wiring devices fell off considerably that year from the total of 1923. The latest figures are $34,682,619, while that for the previous period showed $34,966,232. The numbers of articles produced are not available, and if they were they would probably show a larger output during 1925 than was the case in 1923, and that the reduction in total value is because of a fall in prices. The items follow:

	1925	1923
Lamp sockets and receptacles	$14,825,623	$14,815,915
Snap switches, flush, surface and pendent	7,014,699	6,361,393
Attachment plugs and plug receptacles	4,294,683	4,378,900
Other wiring devices.	8,547,614	9,410,024

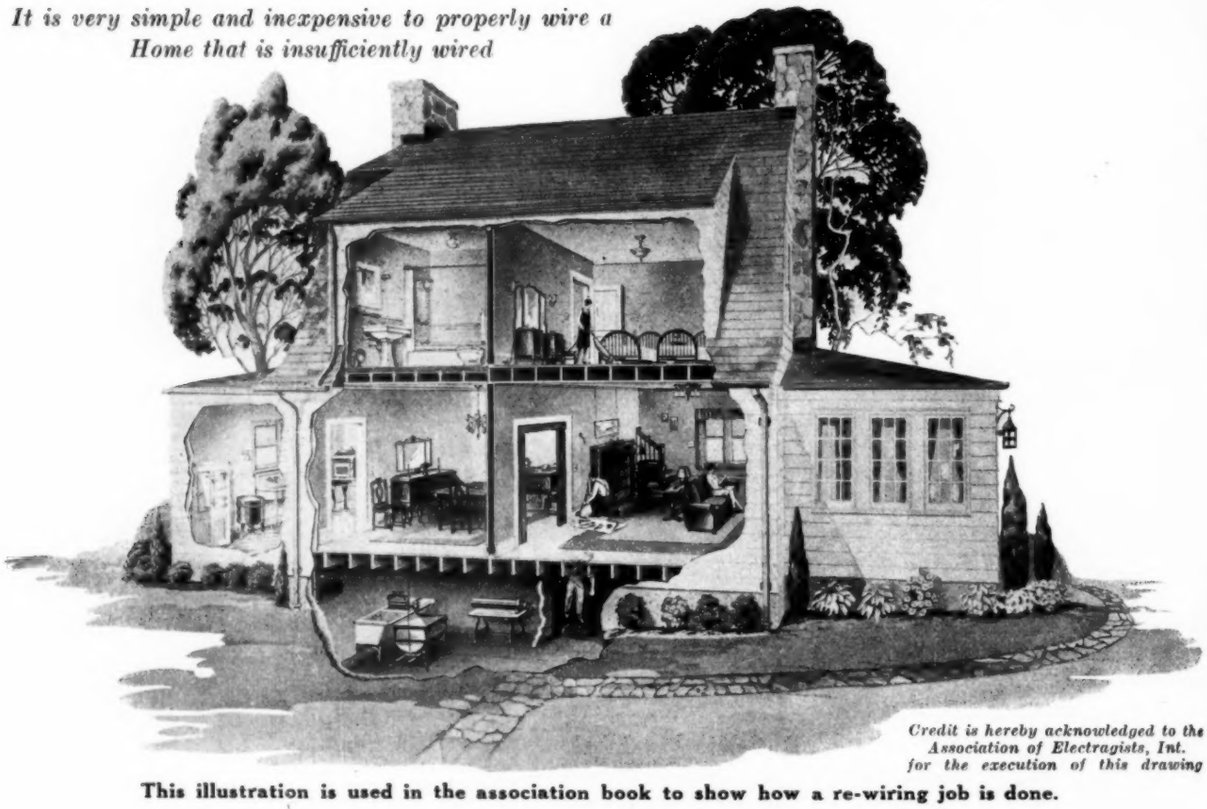
Lamp sockets and receptacles showed a slight increase in 1925, and snap switches made a considerable gain. These were offset, however, by the falling off in value shown by attachment plugs and other wiring devices.

Oil circuit breakers showed a large gain in their classification, as did panelboards and knife switches.

	1925	1923
Total value of electrical products	$1,540,002,041	$1,293,001,771
Batteries, total value	155,245,226	118,065,613
Control apparatus, total value	31,032,159	33,176,615
Fans, electric, total value	12,562,636	12,053,861
Generators, motor-generator sets, and transformers, total value	172,005,613	165,491,396
Household, heating, and cooking appliances, total value	74,726,908	67,002,084
Ignition apparatus for internal-combustion engines, total value	41,364,998	
Industrial apparatus and appliances, not including motor-driven tools and devices, total value	10,279,978	6,788,157
Interior conduits and fittings, total value	43,328,140	35,305,341
Lamps (bulbs only), incandescent, total value	73,558,210	71,966,225
Tungsten:		
Other than miniature types—		
Value	54,892,438	54,179,645
Miniature types—		
Automobile—		
Value	12,432,676	11,354,546
Other miniature types—		
Value	4,840,733	4,860,701
Carbon, including miniature types:		
Number	7,102,572	7,420,528
Value	1,392,363	1,571,333
Measuring instruments, relays, and instrument transformers, total value	31,650,355	28,221,484
Watt-hour meters:		
Value	18,186,206	16,987,548
Demand meters and ampere-hour meters, value	1,043,936	898,591
Indicating instruments:		
Instrument and meter transformers:		
Value	1,1773,161	2,275,943
Relays, other than industrial motor control:		
Value	1,971,687	1,261,510
Motors, total value	112,543,596	109,180,685
Motor parts and supplies, value	12,636,494	13,824,932
Radio apparatus, total value	170,197,861	54,000,470
Radio tubes:		
Value	21,170,610	9,824,172
Other radio apparatus, value	149,027,251	44,176,298
Switchboards, panel boards, circuit breakers, and switches, total value	69,072,044	57,856,166
Telephone and telegraph apparatus (not including wireless), total value	84,421,231	94,483,885
Telegraph apparatus (not including wireless)	2,922,163	2,085,854
Wiring devices, total value	34,682,619	34,966,232
Electro-therapeutic apparatus (exclusive of X-ray tubes and motor-driven devices)	9,763,358	5,991,382
Electrodes for electric lighting and electric furnaces, brushes, and carbon specialties	13,955,483	14,745,541
Fire alarm apparatus	3,489,828	2,639,919
Flashlight cases	4,720,487	3,642,418
Fuses and fuse blocks	10,302,215	9,245,283
Insulators	a 17,857,505	a 16,374,082
Lightning arresters and choke coils	5,961,111	3,833,631
Overhead trolley line material, including brackets for electric and industrial railways, mines, etc. (Items known as pole-line hardware and trolley and span wire are not included)	4,239,547	8,796,369
Railway signals and attachments	14,029,779	(b)
Rectifying apparatus, vibrating, mercury, and other	8,917,192	4,251,495
Searchlights; flood lights; motion picture, photoengraving, and stage projectors; headlights, not including motor vehicle headlights	2,687,038	2,478,988
All other electric machinery, apparatus, and supplies	231,692,684	229,789,066
All other products	88,827,615	59,873,805
Contract work and repairing	6,886,627	10,942,327

a In addition, porcelain insulators to the value of $21,826,971 in 1925 and $21,248,382 in 1923 were made by establishments engaged primarily in the manufacture of pottery.
b. No comparative data.

It is very simple and inexpensive to properly wire a Home that is insufficiently wired



Credit is hereby acknowledged to the Association of Electragists, Int. for the execution of this drawing

This illustration is used in the association book to show how a re-wiring job is done.

Copper and Brass Association Opens Re-wiring Campaign

THE Copper and Brass Research Association, which is made up of the leading copper mining companies and manufacturers and distributors of finished products of copper, brass and bronze, within the past few days has opened its campaign to educate the public of the United States to a realization of the benefits to be derived from bringing the wiring of their homes up to modern standards.

Newspaper and other forms of advertising will be used and as rapidly as possible copies of an eighteen page booklet, well illustrated and in colors, will be placed in the hands of the public. A fund of many thousands of dollars has been appropriated by the association for the promotion of this campaign to rewire the American home.

In the preparation of the booklet the Copper and Brass Research Association enlisted the help of the Association of Electragists, International, in executing an exploded drawing of a home to show the ease and simplicity with which additional outlets may be installed without creating any muss about the house.

The text of the booklet which will be put in the hands of the public follows and it will be noticed that the copper association has urged the houseowner to call up his electrical contractor to have him plan the necessary extension of the wiring to provide for the increased comfort and convenience.

ELECTRICITY AND THE MODERN HOME

One of the greatest factors in developing the comfort and convenience of the modern home is the use of electricity. Every house built today that is within reach of a Central Station service you expect to see wired for electricity, as well as heated, and piped for water.

Type, size or location makes no difference. Whether city or suburban, mansion, cottage or bungalow, a modern, livable home must be wired for electricity.

Use of Electricity Increases

What a contrast is shown today by the progress of electric lighting, the development of artistic and efficient lighting fixtures, and the tremendous growth in the use of power and heating appliances, all in the last few years! Practically all new residences are wired when built, and each year likewise has seen more and more of the earlier-built homes wired for the use of electricity. This is shown by the increase in the number of wired homes in the United States in the last five years. In 1921 wired dwellings totalled less than eight million, while at the end of 1926 it was estimated that the number had grown to nearly fourteen million!

Proper Lighting Fixtures

Lighting fixtures nowadays are looked upon as something more than merely the support for a lamp bulb. Today lighting fixtures are as much a part of the decorative scheme of a home as the furniture, the rugs, the pictures, or the wall hangings. No one would build or re-decorate without considering the type and finish of lighting fixtures which will best harmonize, knowing that it is possible to obtain beautiful and artistic fixtures in a wide variety of materials and designs. The science of lighting has progressed far. Every homeowner today can enjoy the fruits of research of the great electrical laboratories, which have shown us how to use electric light without glare, shadow or eyestrain, as well as the decorative treatment of light itself.

Electric Housekeeping

Perhaps the most amazing development of the use of electricity in the home we accept as a commonplace, because it has become so familiar; that is, housekeeping by electricity, with the help of the faithful handmaids of light, heat and power. Our visitors from abroad who see our homes never fail to comment on our general and lavish use of electrical appliances, irons, vacuum cleaners, toasters, washing machines, fans, heaters, ranges and so on. These are the items in

most common use, though every day sees new additions to the list. There are approximately a hundred and fifty different electrical appliances which can be used in the modern home to make housekeeping easier and pleasanter and living more comfortable and agreeable.

To use electricity, you have an outlet . . . a ceiling fixture, a wall bracket, a floor plug, or a wall plug, just as to use water, you must have a tap or a valve, in laundry, kitchen, bathroom or lavatory. But electricity you want to use not only in every room in the house, from cellar to garret, but at more than one point in each room. Gone are the days when people were satisfied with one or two outlets per room. The standards of the use of electricity have risen from year to year, as shown by wiring installations and the number of outlets in newly built houses, as the public have realized more and more that if it is going to have the convenience of electricity it might just as well have *the full convenience.*

What Is Your Wiring Like?

We have now something over fourteen million American homes wired at different times over the past twenty-five years, and each wiring installation represents largely the standards of use of electricity at the time. The chances are that your own home is typical of these millions of wired homes, in that the wiring installation according to present day standards, and your own desires for the use of electricity, is inadequate. Look around. Haven't you got something like this: In your kitchen, one or two single light fixtures, each with a two-way tap for flatiron and light; in your dining room, a ceiling fixture or wall brackets with a snaky festoon of extension cords to the toaster, waffle iron or percolator on the dining table; in the living room, chandelier or wall brackets, or maybe one lone baseboard plug, with two and three-way taps, with a tangle of extension cords running here, there and everywhere . . . to the bridge lamp, the piano lamp, the lamp on the end-table, and the radio charger. When you use the vacuum cleaner, do you have to unscrew a lamp before you plug in the cleaner? What do you have in your bedroom, bathroom, halls, more multiple taps and still more extension cords?

Do you have switches conveniently placed to control the lights in each room, or do you have to grope around in the dark to find the key on the fixture, dodging the furniture as you go?

Do your lights annoy you by blinking when the curling iron or the toaster goes on? Haven't the fuses blown when the flat iron was plugged in, leaving half your house in darkness, with no spare fuses on hand, and the stores closed, so you and the family had to finish the evening by candle light, or else go to bed early? How many times have you suffered such annoyances, and wondered perhaps what could be done about it?

Are Your Circuits Overloaded?

When your house was originally wired the total number of outlets installed was divided and arranged on separate circuits, so that the total load in watts on each circuit would not exceed the maximum allowed by Underwriters' rules and local wiring codes. Branch circuits are run from the panel board on which the meter is placed, and each circuit is protected against overloading by fuses. When you plug into sockets or baseboard outlets with two and three-way taps, hooking on more lamps, more heating and power appliances, you are increasing the load on a circuit beyond that for which it was originally planned, and soon

MY NICE NEW, TABLE CLOTH! OF COURSE YOU'VE GOT TO SPILL YOUR FOOD ON IT!
WELL - I CAN'T EVEN SEE MY FOOD IN THIS DARNED ROOM! THE LIGHTS ARE AWFUL!
THIS BLANKITY BLANK - BLANK LIGHT! I CAN'T SEE TO READ THE PAPER! NOT EVEN THE HEADLINES!!
WELL WHO'S TO BLAME BUT YOURSELF? DIDN'T I WARN YOU? DIDN'T I TELL YOU NOT TO MOVE INTO A POORLY WIRED HOUSE? DIDN'T I?
THERE THE LIGHTS GO OUT AGAIN! THAT'S THE THIRD TIME YOU'VE BLOWN THE FUSES OUT!
I'M A WEEK BEHIND IN MY IRONING!! NOW I'LL HAVE TO WAIT TILL TOMORROW--
IT'S YOUR OWN FAULT! WHY DIDN'T YOU HEED MY ADVICE AND GET A PROPERLY WIRED HOME?
I'M GOING TO CALL THE ELECTRICIAN UP RIGHT NOW AND HAVE HIM HERE TOMORROW TO REWIRE THIS HOUSE WITH MORE CIRCUITS AND PLENTY OF OUTLETS
AND SO, FAR-FAR INTO THE NIGHT!!
BRIGGS

Sample of the advertising copy used in the campaign.

the point is reached where the overload can increase no further and the fuse blows.

Wiring Easily Modernized

Because your house wiring is hidden away behind walls and under floors, you have considered it perhaps as fixed and unchangeable as the floor beams or the foundation walls. But it is not; a wiring installation is a flexible system which can be altered and extended so as to modernize completely your home use of electricity and to enable you to enjoy its full convenience without any of the annoyances of inadequate use.

It is a very simple matter for an electrical contractor to give you more outlets, arranged on a new circuit run to the meter board. You can discard the multiple taps and the networks of extension cords, and in their place enjoy the convenience of outlets on walls or baseboards exactly where you want to use them, secure from the annoyance of blinking lights or the danger of overloading circuits.

The electrician today works with surprising speed, and with the absolute minimum of muss, dirt or annoyance. He doesn't have to tear up floors, walls or break into plaster to add new outlets or new circuits. A small neat hole where an outlet or switch plate is to go, one narrow floor board up, or one small section of parquet flooring carefully lifted, is all the workman needs to enable him to "fish," or dexterously coax the wiring from room to room and from outlet to outlet. The careful electrician places his tool on a strip of cloth, and catches up his chips or borings as he goes, and when he finishes he has left a clean job behind him. This is illustrated by the drawings. House wiring is without doubt one of the best examples to be found of quick, clean, quiet and efficient craftsmanship.

(Continued on Page 42)

Maybe the Findings of This Survey Will Help You Solve

That Vacation Problem

Should We Pay Them? How Long Should They Get? Who Gets Them? How About the Mechanic?

EACH year brings to most organizations the necessity of determining on a policy for the vacations of the employees, and at this time, with the approach of the summer season, a survey recently made by THE ELECTRAGIST is especially timely. The question comes up continually as to who is entitled to a vacation, whether the office force and mechanics both should be accorded "time off," whether full wages should be paid during these times, whether the policy of granting vacations makes for better morale.

For the benefit of those who have been confronted with such a problem, a questionnaire was sent to a selected list of five hundred contractors and contractor-dealers located in every state in the United States and in Canada. The list represented both large and small organizations, and a surprisingly large response to the questionnaire resulted in an excellent cross-section of the vacation practice of contractor organizations. It indicated, too, that considerable thought is being given to the subject.

The questions asked and the replies to each, figured on a percentage basis, are shown on the opposite page. An analysis of the replies follows:

The first question asked whether or not an organization had a definite vacation policy. Those giving an answer of "yes" totaled 67 percent, while those indicating "no" were 17 percent of the total. For some reason or other some did not indicate by a "yes" or a "no" whether they had such a policy, but the sense of their replies indicated that they had a policy. Seventeen percent were thus classified.

The Mechanic's Vacation

Some interesting facts concerning the granting of time off with pay to mechanics comes to light upon analyzing the answers to the next question, whether vacations are granted to the office force and to mechanics. Eighty-seven percent of the replies showed that the office force is given vacations with pay, and but 2 percent answered that the mechanics in their employ are similarly treated. Eight percent, however, replied that they extend vacations to mechanics, but did not state whether or not full pay went with them. From answers to other questions, however, it might be inferred that these are given at the individual's expense in each instance. Foremen and shop mechanics receive vacations with pay from 17 percent of those who replied. No vacation at all to office force, foremen, shop employees or mechanics was reported by 13 percent, and 93 percent stated definitely that no vacations are given to mechanics.

TAKEN from the standpoint of dollars and cents consideration as well as from that of the possible impairment of the efficiency of an organization, the vacation question is a mighty important one. The splendid and immediate response to our questionnaire shows that the industry is alive to the situation. Quite a few replies indicated a desire to get an insight into the practice as carried out by others, and it is hoped that the facts and figures contained in this résumé of the replies will be of assistance to the industry.—The Editor.

One reply to the question of a vacation for mechanics was to the effect that this company's business slackens up during the summer months and that the heads of the organization like to have the workmen take time off at their own expense. Another added that a mechanic may take a few days off, or even a week, at his own expense if the company is notified sufficiently in advance to arrange the work to cover his absence. One of those who replied to this question added that "Employees should be treated as human beings, not as slaves." The fact that one concern has a policy guaranteeing 100 percent normal working hours to its mechanics, plus time and a half and double time for any overtime work, has caused it to refrain from giving a week with pay, which it had been contemplating. The contention is that the wage scale is such that it is worth more to the men to be working under these conditions than to be given any definite vacation.

A good many of the replies to this question indicated that time off would be given to a mechanic if the work at hand warranted his being spared and if he took it at some time convenient to the organization. One reply that mechanics are given vacations with pay added that these went to men who were five years or more in the employ of the company.

Who Gets a Vacation?

The policy of determining who gets a vacation and the length of time of vacations was taken up in the next question. That the length of time an employee is on the payroll of an organization is the basis for this computation, 65 percent of the replies indicated, while 35 percent stated that some other method is used in determining it. Most of the replies showed that those who are entitled to vacations under the firm's policy governing them receive one week when they have been on the payroll for a year, and two weeks for those who have been employed a longer period. Some, however, give a week after six months of service, others a day for every month a person has been employed during the year. Some seem to be more liberal and give a two-week vacation to those working for them a year. One answer showed that a person had to be on the payroll for three years before he got a vacation.

One man's policy, for instance, was not to give any definite vacation period to his employees, but rather to give them a day off now and then without

any deduction in their pay. He added that he considered two weeks each year to be proper, but inferred that this should be consumed in small doses of a day at a time, charging time taken for illness against the total.

Another interesting policy is that of giving three weeks vacation with full pay, any time taken off because of illness being deducted from this amount. Those whose illness keeps them away from their desks longer than three weeks have their positions held for them, but are obliged to pay the cost of additional help if such be needed to fill their places during their absence.

An overwhelming percentage of 94 was recorded by those who give their vacations with pay against 6 percent who do not follow this practice. One contractor wrote, in speaking of this point, that he did not contemplate giving any such concession to the men on an hourly basis of pay since they are always ready to penalize the contractor for every few minutes of overtime they put in.

Frequently people are anxious to add a little time to that allotted to them and will try to wheedle it out of an employer if it is at all possible. This makes the next question, whether or not an employee at his own expense is permitted more time than the amount accorded, of considerable interest. Such requests on the part of office help have a tendency to throw out a carefully prepared schedule and put an unnecessary burden on the shoulders of the others, even though it may not reflect on the payroll in any way, unless special substitute help has been called in. Slightly more than 57 percent do not allow any extra time in this way, with a fraction under 42 percent permitting it. Those who do permit this practice limit it to one week as a rule, although some do permit two weeks at the outside. One contractor permits up to five days over, while a few stated that they had never been confronted with a request of this nature and did not know just how they would act if it were presented to them.

Effect on Morale

The important question of employee relations gets some attention in the next question: "Since starting your vacation policy have you noticed any favorable results in employee relations, and in what way?" Opinion as to "yes" or "no" in this matter showed 59 percent "yes" and 41 percent "no." Some of those who have found it of benefit say that there is less labor turnover as a result of it.

Some comments on this question took both sides as follows: "More of a happy family,"

"Seems to be a kindlier feeling toward the company,"

"It takes about two weeks to forget the vacation and get back to work,"

"They are entitled to it; come back more snappy,"

"Loyal until some one offers them better wages,"

"They seem refreshed and settled, are more content and work better,"

"They appreciate the vacation and come back ready to work harder,"

"Employees are more congenial and better satisfied,"

"Increased efficiency and loyalty,"

"Co-operate better,"

"Vacation puts new pep into any of us,"

"They feel it is coming to them and do not thank you for it."

Experience has been such that 85 percent of those who have granted vacations are willing to advise a contractor who has not been giving vacations to start such a policy. One contractor went so far as to remark that he "did not know that there was such a contractor" who did not have a policy of giving vacations. Another suggested that any contractor contemplating such a policy should make it applicable only to those employees who showed an interest in their work.

When the vacation season starts each year there is continually coming up a question of balancing the work in some manner to assure its being carried on with the speed and thoroughness that characterized it during the non-vacation periods of the year. Is it necessary to hire additional help to do this, or can it be effected by some other means? This is an important consideration, for if the work is to fall off and not run with something approaching its customary smoothness the business is bound to suffer one way or another, and if extra help is required it is just an added item to the contractor's payroll. Slightly more than 45 percent replying to this question of additional help stated that it was necessary for them to hire substitutes for those away. Some of the replies of those who answered "no" added a note to the effect that it is generally possible to so arrange the work in the various departments that things will run along almost as usual. One

(Continued on Page 38)

Policy on Vacations

(a) Have you a vacation policy? **Yes, 66 percent; no, 17 percent; indefinite, 17 percent.**

(b) Do you give vacations to office force? **Yes, 87 percent; no, 13 percent.**
To mechanics? **Yes, 2 percent; no, 98 percent.**

(c) Are vacations dependent upon length of time employed? **Yes, 65 percent; no, 35 percent.** If so, on what basis? (See analysis)

(d) Do you pay full wages during vacations? **Yes, 94 percent; no, 6 percent.** If not, on what basis do you pay people on vacation? (See analysis)

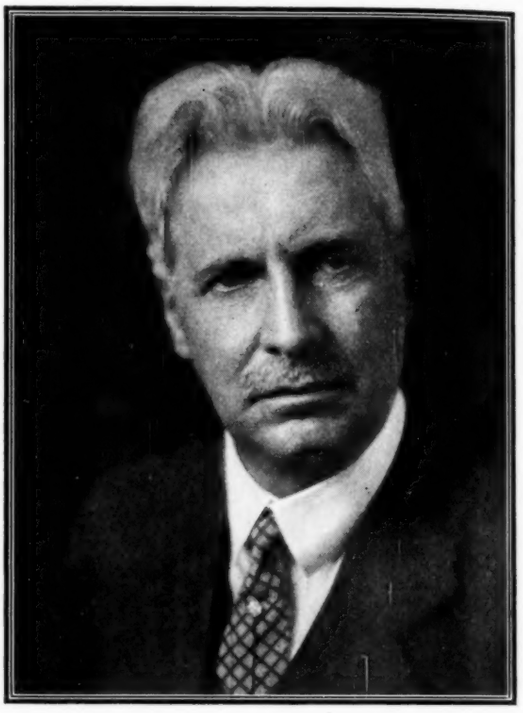
(e) May an employee take more time than an allotted vacation period at his own expense? **Yes, 42 percent; no, 58 percent.** If so, how much? (See analysis)

(f) Since starting your vacation policy have you noticed any favorable results in employee relations? **Yes, 59 percent; no, 41 percent.** If so, in what way? (See analysis)

(g) On the basis of your experience with vacations would you advise a contractor who has not been giving vacations to start such a policy? **Yes, 85 percent; no, 15 percent.**

(h) Is it necessary to hire additional temporary help to replace those away? **Yes, 46 percent; no, 54 percent.**

William A. Koeneman, St. Louis



WILLIAM A. KOENEMAN, president of the Guarantee Electric Company, St. Louis, Mo., has had a varied career in the electrical industry, working at different times as wireman's helper and wireman for a central station company and contractor, business agent for a local electrical union and salesman for an electrical supply house. Since 1903 he has been head of his own contracting organization, the Guarantee Electric Company. His first job in the electrical industry was as a wireman's helper for the central station company in St. Louis. He later was promoted to wireman and was in the employ of the utility for three years. He then went into the contracting field, working four years as wireman for different contractors, and later acted for one year as the business agent for Local No. 1, St. Louis, following which he was a jobber's salesman for the Commercial Electrical Supply Company. In 1903 Mr. Koeneman went in business for himself, forming the Guarantee Electric Company, of which he is still the head. There are four boys in the Koeneman family, three of whom are in the electrical contracting field. Two of these, Edward A. and William A. Koeneman, are in business in St. Louis, and the other, Charles, is in the contracting branch in Jackson, Miss. Mr. Koeneman has always been active in electrical affairs of all kinds in his native city, and has been a leader in association activities of various kinds. He has acted as president of the St. Louis Electrical Contractors' Association and of the St. Louis Electrical Employers' Association. He is a leading spirit in the work of the Association of Electragists and is taking an active part at the present time in preparation for the twenty-seventh annual convention of that organization in August in St. Louis.

Electragists You Should Know

L. T. Souder, Washington

L. T. SOUDER is head of his own electrical engineering and construction organization at 839 Florida Avenue, N. E., Washington, D. C., which he founded in 1919 and has seen grow steadily ever since. It was during his days at school that young Souder started out to work, and after he completed his education his introduction to the business of wiring took place. This was in the employ of the local telephone company as a shop man. He continued in this capacity for about seven years, at which time he was promoted to the position of foreman and later superintendent and estimator for the company. In the latter capacity he remained on the payroll of the telephone company for some time, when he concluded that his own business would be better for him. Accordingly, in October, 1919, he started his own enterprise, carrying on electrical construction work in general and specializing in theatre installation work and maintenance. The Souder organization is also doing some power work and a limited amount of house wiring. Outside activities in the electrical industry take up much of Mr. Souder's time. He is active in association work of various kinds and has done much good work in maintaining a high degree of efficiency in the organizations with which he has been connected. At the present time he is president of the Electric League of Washington and of the Electric Bowling League at the Capital. He is active in the affairs of the Association of Electragists and is a member of the Monarch Club and City Club of Washington. Mr. Souder has been in the forefront in Red Seal work in his capacity as president of the Electric League of Washington and has done much to stimulate adequate wiring in his city.

Proposed Florida Act Has Many Model Features

AN UNUSUALLY clear and carefully worded state registration and inspection bill involving many features that will be of interest to electrical contractors in other states has been presented to the Florida legislature. If this bill becomes law Florida will be the first state in the Union to operate entirely on the basis of the current National Electrical Code.

The bill provides that an unpaid board of wiring commissioners be created, to consist of five members, a contractor-dealer, a central station representative, a municipal electrician, a wholesale distributor of electrical supplies and a registered architect; that a state inspector be appointed; that a contractor be required to pass an examination of fitness and having done that be required to register annually and pay a fee of $10; that journeymen register and pay an annual registration fee of $3; that one registration in the state is effective throughout the state. One portion of the proposed act provides for reinspection in a very positive way.

The bill was prepared jointly by the Florida Association of Electragists and the Florida Association of Municipal Electricians, and represents the combined thinking of all the electrical interests of the state.

Because of its clarity and thoroughness the proposed act is printed here almost in its entirety. In places where regular routine matter is presented the provisions are briefly summarized.

The bill follows:

A BILL

To Be Entitled

AN ACT to Regulate the Installation of Electrical Wiring, Apparatus and Equipment, for Lights, Heat or Power, in the State of Florida, for the Better Protection of Life and Property, * * *

Be It Enacted by the Legislature of the State of Florida:

SECTION 1. (A) That Electrical Construction for the purposes of this Act is defined as follows:

The term "Electrical Construction" as used in this Act shall be held to include and govern all work and materials used in installing, maintaining and extending a system of electrical wiring for lights, heat or power and all appurtenances thereto and all apparatus or equipment used in connection therewith inside of or attached to any building or structure, lot or premises.

(B) The term "Electrician" as used in this Act shall be held to mean a person who is engaged in the trade or business of "Electrical Construction" as defined in the foregoing paragraph.

(C) The term "Master Electrician" as used in this Act shall be held to mean a person who possesses the necessary qualifications, training and technical knowledge to plan, lay out and supervise the installation of electrical wiring, apparatus or equipment for lights, heat or power as covered by the terms and provisions of this Act.

(D) The term "Journeyman Electrician" as used in this Act shall be held to mean a person who possesses the necessary qualifications, training and technical knowledge to install electrical wiring, apparatus or equipment for lights, heat or power as covered by the terms and provisions of this Act, in accordance with plans and specifications furnished to him and in accordance with the standard rules and regulations governing such work.

SECTION 2. There is hereby created a Board to be known as "The Board of Wiring Commissioners of the State of Florida," which shall be composed of five (5) members, of whom one shall be a licensed Master Electrician, who shall be a recognized Contractor-Dealer, regularly engaged in the trade or business of Electrical Construction in the State of Florida; one an authorized representative of a Public Utility Company or Corporation, engaged in the manufacture and distribution of electricity for lights, heat or power in the State of Florida; one a Municipal Electrician, regularly employed, in a Supervisory capacity, in municipal electrical work, by an incorporated City or Municipality in the State of Florida; one a Wholesale Distributor of electrical materials, regularly engaged in such business in the State of Florida and one a registered Architect, regularly engaged in the practice of the profession of Architecture in the State of Florida, all of whom shall be residents of the State of Florida and shall be appointed by the Governor of the State of Florida as soon as practicable after the passage of this Act, each for a term of four (4) years, or until his successor has been appointed and qualified for a like term, except that the first appointees to such offices shall hold said appointments as follows: (Here follow the terms of office.) Sections 3 and 4 deal with the Commission's meetings and similar details.

SECTION 5. The said Board of Wiring Commissioners shall make such rules and regulations, not inconsistent with law, as it may consider necessary to the proper performance of its duties. It shall be the duty of the said Board, immediately after its organization, to proceed to establish, adopt, promulgate and put into effect, a code governing the installation, maintenance and repairs of electrical wiring, apparatus or equipment for lights, heat or power, inside of or attached to buildings or structures in the State of Florida, using the current issues of the National Electrical Code, Regulations of the National Board of Fire Underwriters for Electrical Wiring and Apparatus as recommended by the National Fire Protection Association and approved by the American Engineering Standards Committee, and of the National Electrical Safety Code as recommended by the Bureau of Standards of the United States Government, Department of Commerce, and approved by the American Engineering Standards Committee, as Standards, with such additions, not in conflict with said National Electrical Code and National Electrical Safety Code, as local conditions may require. The latest editions of said National Electrical Code and National Electrical Safety Code shall be taken at all times as authorities for determining questions arising as to details of electrical construction, except as otherwise provided in this Act; and the said Board shall have the right and it is hereby made its duty to promulgate and put into effect, from time to time, reasonable rules and regulations, supplementary to but not in conflict with the provisions of the National Electrical Code or of the National Electrical Safety Code, for the more effective and specific governing and control of electrical construction than is embodied in said National Electrical Code or National Electrical Safety Code.

SECTION 6. That from and after the passage of this Act every person engaged or desiring to engage in, or work at the trade or business of electrical construction, either as a Master Electrician or as a Journeyman Electrician, shall make written application to the Board of Wiring Commissioners of the State of Florida for examination as to such applicant's ability and experience and fitness to engage in such work. Upon receipt of such application, the said Board of Wiring Commissioners shall cause such applicant to be notified in writing of the date and place of the next examination to be held. Such examination shall be held by or under the direction of said Board of Wiring Commissioners, and shall be designed to test applicant's practical ability and technical knowledge of electrical construction, and if such applicant passes a satisfactory examination, and the Board of Wiring Commissioners are satisfied as to his competency, they shall thereafter issue a certificate to such person to engage in the business of electrical construction, either as a Master Electrician, or as a Journeyman Electrician, as the case may be. The fee to be charged for examination of an applicant for a certificate to engage in business as a Master Electrician shall be Twenty-five ($25.00) Dollars, and every person to whom such a certificate shall be issued may register and renew his certificate on the first day of each fiscal year thereafter, and for such registration and renewal of certificate shall pay the sum of Ten ($10.00) Dollars. The fee to be charged for examination of an applicant for a certificate to engage in or work at the trade or business of electrical construction as a Journeyman Electrician shall be Five ($5.00) Dollars, and every Journeyman Electrician, to whom such certificate shall

be issued, may on the first day of each fiscal year, register and renew his certificate, and for such registration and renewal of certificate, he shall pay the sum of Three ($3.00) Dollars;

SECTION 8. All certificates issued by the said Board of Wiring Commissioners shall be effective throughout the State of Florida; provided, that nothing in this Act contained shall be held to prohibit any Municipality from charging and collecting such occupational license tax or fee as may be fixed by local ordinance for persons or firms engaging in the trade or business of electrical construction within the corporate limits of such municipality.

SECTION 9. The members of the Board of Wiring Commissioners shall receive no salary or other compensation for their services, but the said Board shall have the power and authority to pay the expenses of said Board and the members thereof while traveling on, or engaged in the business or duties of the Board, and to pay the expenses of the State Electrical Inspector and Deputy State Electrical Inspectors incurred in connection with the duties of such office.

SECTION 10 covers the question of the financial administration.

SECTION 11. There Is Hereby Created the Office of State Electrical Inspector of the State of Florida who shall be appointed by the Governor of the State of Florida as soon as practicable after the passage of this Act, upon the recommendation of a majority of the members of the Board of Wiring Commissioners hereinbefore created, for a term of four (4) years, or until his successor has been appointed and qualified for a like term, and who shall be an Electrician with not less than ten (10) years' practical experience as such, and who shall possess the necessary qualifications of a Master Electrician, as hereinbefore defined in this Act. The salary of the State Electrical Inspector shall be Four Thousand Five Hundred ($4,500.00) Dollars per annum, payable monthly by the said Board of Wiring Commissioners, and he shall also be paid all traveling and other expenses incurred by him in performing the duties of his office, or carrying out the orders of the Board of Wiring Commissioners. Said Board of Wiring Commissioners shall fix the duties of the State Electrical Inspector, and shall have supervision over such officer.

SECTION 12. The State Electrical Inspector shall have authority, with the approval of the Board of Wiring Commissioners, to name and employ such number of Deputy State Electrical Inspectors as may be necessary to carry out the purposes of this Act, whose compensation shall be fixed by the said Board of Wiring Commissioners, but in no case shall be fixed to exceed the sum of Three Thousand ($3,000.00) Dollars per annum for each Deputy State Electrical Inspector so employed. Such Deputy State Electrical Inspector shall be practical electricians of at least five (5) years' experience, and skilled and well trained in matters pertaining to Electrical Construction, as hereinbefore defined in this Act.

SECTION 13. (A) The said Electrical Inspector is hereby empowered to inspect or re-inspect at his option all wires and apparatus conducting or using electric current for lights, heat or power, and when said conductors or apparatus are found to be unsafe to life or property, he shall notify the person, firm or corporation owning, using or operating them to place same in a safe and secure condition within twenty-four (24) hours, or within such further time as the Electrical Inspector shall determine is necessary.

(B) Whenever any wiring, apparatus or fixture conducting or using current for lights, heat or power is found upon inspection by the State Electrical Inspector or one of his duly authorized Deputies, to be so hazardous to life and property, as in his discretion to require immediate attention, the said Electrical Inspector shall immediately open the switch or circuit breaker controlling the supply of current to such wiring, apparatus or fixtures and shall post in a conspicuous place near such switch or circuit breaker a notice, printed in red letters, reading substantially as follows:

NOTICE
WIRING CONDEMNED

The use of electric current is prohibited through this wiring or equipment until proper repairs have been made and approved by the State Electrical Inspector.

Repairs must be made by a Licensed Electrician and the Inspector must be notified when completed.

* * *

SECTION 15. The said Board of Wiring Commissioners shall have the authority to issue permits for the installation of electrical wiring, fixtures, apparatus or equipment for light, heat or power, in the State of Florida and to charge and collect for inspection the following fees: (Here are enumerated the various fees.)

All such fees shall be paid by the Master Electrician, making application for a permit to do such work, at the time of application.

SECTION 16. Permits to do electrical work, covered by the provisions of this Act, shall be issued to Master Electricians only, who have previously qualified as such and who are in possession of certificates as hereinbefore provided.

SECTION 17. No electrician, licensed under the provisions of this Act, shall use or allow his name to be used, improperly, by any other person or party, directly or indirectly, either for the purpose of obtaining a permit, or to do any work under his license.

SECTION 18. A permit will be required to do any electrical construction of any character, install any electrical wiring, apparatus or equipment or make any extensions or changes to any existing system of wiring for lights, heat or power within or attached to any building or structure in the State of Florida, included in the provisions of this Act, excepting the repairing of damaged or broken fixtures, apparatus or equipment and the ordinary work necessary for the proper maintenance of same and further excepting outside construction work, either overhead or underground and work done in central or sub-stations by employees of Municipal Electric Plants or Public Service or Utility Companies or Corporations engaged in the manufacture and distribution of electricity for lights, heat or power in the State of Florida, in connection with the manufacture or distribution of such electricity, when such outside construction work, or work done in central or substations is done under the supervision of the duly authorized officials of such Municipal Electric Plant or Public Service or Utility Company or Corporation.

SECTION 19. All Municipalities within the State of Florida which shall adopt the Code promulgated by the State Board of Wiring Commissioners, as a local Ordinance regulating the installation of electrical wiring, apparatus or equipment for lights, heat or power in such Municipality, and shall enforce the same, or such additional rules and regulations as local conditions may require, not in conflict with said Code and subject to the approval of said Board of Wiring Commissioners before being put into effect, shall have the right to appoint a local Electrical Inspector or Inspectors who shall have the same qualifications as provided in this Act for a Deputy State Electrical Inspector, and to collect and retain fees fixed by this Act, for the inspection of such work, or such additional fees or other charges as the governing authorities of such Municipalities may deem proper. Provided, that the terms and provisions of this Act shall only apply to Incorporated Cities and Towns in the State of Florida, and shall also apply to all territory within a radius of five (5) miles of the Corporate Limits of such Cities and Towns.

SECTION 21. Any person violating any of the provisions of this Act, or any of the rules and regulations embodied in the State Electrical Code to be promulgated and adopted by the State Board of Wiring Commissioners, as hereinbefore provided, or any lawful rule or regulation adopted by said Board, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be subject to a fine of not less than Twenty-five ($25.00) Dollars, nor more than One Hundred ($100.00) Dollars, or imprisonment for a period of not more than thirty (30) days, or both such fine and imprisonment in the discretion of the Court, for each and every violation thereof.

SECTION 22. Any Master or Journeyman Electrician, who is licensed in accordance with the provisions of this Act, and who shall be found guilty of wilfully violating any of the provisions contained herein, shall forfeit his license for a period of not less than ten (10) days nor more than one (1) year, as may be determined by a majority of the members of the Board of Wiring Commissioners, hereinbefore provided for, after a thorough and proper investigation of the facts, and the said license or certificate shall be revoked for the period so determined.

That Vacation Problem

(Continued from page 35)

contractor stated that his vacations are arranged early in the year and in such a way that only one person from a given department is away at one time. The person longest in the employ of the organization has first choice of the period of vacation and the rest work out theirs accordingly. One contractor, who does not find it necessary to hire additional help, adds that his is a small office and when any one is away on a vacation the establishment does not operate efficiently, and since they are usually taken when the rush of work is at its height they are costly and annoying. Some office forces, the replies indicated, are willing to work a little harder while any member is away and thus relieve the management from adding any substitutes. One concern reported that it is its policy to avoid extra help by having each employee study the work of the others so as not to let the work pile up while one is away.

Chats on the National Electrical Code

A Monthly Discussion of Wiring Practice and Questions of Interpretation, Presented with a View Toward Encouraging a Better Understanding of the Industry's Most Important Set of Rules

Conducted by F. N. M. SQUIRES
Assistant Chief Inspector, N. Y. Board of Fire Underwriters

Conductors for Use in Hot, Moist Locations

Rubber insulation is designed to take care of conductors in damp locations and under certain conditions a lead covering is also required. In dry places where the temperatures exceed 120 deg. Fahr. slow-burning wires may be used.

But what are we to do when we have a condition of both excessive heat and moisture? If we use rubber-covered wire the heat bakes out the insulation and then the moisture soaks in with the consequence that no insulation is afforded. If slow-burning wire is used it stands the heat, but absorbs the moisture like a sponge.

We are very desirous of obtaining field experience on the solution of this problem and would greatly appreciate information concerning this. The results of any tests will be very welcome. If sufficient data is received a summary of experiences will be published and discussion started.

Grounding the Service Conduit

In driving through rural sections and outlying subdivisions where new electrical installations are being made I have noticed that it is quite common practice to guard the service conduit ground wire by incasing it in conduit or pipe. For protection of the ground wire against physical damage this is excellent, but I question whether or not the lightning hazard to the property is not increased by the incasing of this ground wire with magnetic material.

To my mind the service conduit ground wire has two functions: First, the providing of a substantial copper path to ground in an effort to keep the conduit always at zero potential; and, second, the tendency to prevent lightning from entering the premises along the service wires by providing an effective path to the ground outside of the premises. If the latter assumption is correct the service conduit ground wire should be classed along with lightning arrestor grounding wires which are specifically covered in rule 905-D as follows: "In the case of a lighting arrestor grounding wire the protection shall be composed of non-magnetic material, unless the grounding conductor is electrically connected to both ends of the protective covering."

Admitting the theory that the surrounding of a conductor with magnetic material would act as a choke to the passage of high-frequency alternating current we can then say that the service conduit of itself acts as a choke to the passage of lightning, or other high-frequency currents, to the interior of the building along the service wires. If, then, we provide further for a direct path to the ground without such a choking effect in the path we can assume that the lightning will have a tendency to follow this conductor to the ground rather than enter the property.

Rule 905-D as quoted suggests an easy remedy for this condition: That of connecting the grounding conductor electrically to both ends of the protective covering. Damage from lightning entering on the service wires is, of course, much more frequent in rural and outlying districts than in the larger cities where steel frame buildings, piping and wiring systems, seem to be able to prevent heavy charges from collecting. The remedy is so simple that I do not believe any inspection department would have difficulty in putting it in effect.

L. P. DENDELL.

Motor Tap Circuits

Rule 808 (b) permits the omission of automatic overload protective devices at the point where conductors carrying the current of only one motor are connected to feeders, provided their current carrying capacity is at least one-third that of the feeders, the length of the conductors between the feeders and the motor running overload protective devices is no greater than 25 ft. and they are installed in conduit or otherwise suitably protected against mechanical injury.

Let us consider the application of this rule to a specific installation as, for

After a lapse of a month we resume these Code Chats. Mr. Forsyth, who had been conducting this section so ably, has not enjoyed good health. That, coupled with the press of a very busy inspection department, has forced him to give up this work. It will be directed in the future by F. N. M. Squires, who is in charge of electrical inspection in Brooklyn. Mr. Squires is also very active in the Eastern Association of Electrical Inspectors and is chairman of its Code Committee.

Assisting Mr. Squires in the conducting of this section will be:

F. A. Cambridge, City Electrician, Winnipeg, Man., Canada.

L. P. Dendell, Engineer, Michigan Millers Mutual Fire Insurance Company, Lansing, Mich.

L. W. Going, Chief Electrical Inspector, Portland, Ore.

R. H. Manahan, Chief Electrical Division, Department of Safety, Los Angeles, Cal.

C. W. Mitchell, Chief Electrical Engineer, Pacific Board of Fire Underwriters, San Francisco, Cal.

George Wellman, Chief Electrical Inspector, Louisiana Rating and Fire Prevention Bureau, New Orleans, La.

These men are well known for their progressive thinking and it is hoped that the views they will express in this section from time to time will be most productive of good.

—THE EDITOR.

example, supplying current to a 15 h.p. 220-volt 3-phase motor from a 600,000 c. m. feeder. (Fig. 1.) The size tap conductor necessary to satisfy the code rule would be No. 2/0. The conductors of this tap circuit will be fused within 25 ft. of the point where they connect with the 600,000 c. m. feeders and a circuit of No. 4 wire extended to the motor running protective devices. Such an installation would satisfy all code requirements. * However, should one or more additional motors be required at this same location a strict interpretation of the rule would call for one or more additional tap circuits of No. 2/0 cable as shown in Fig. 2. It would seem, however, that the arrangement shown in Fig. 3 is equally as safe and surely much more satisfactory. Perhaps the Code rule could be amended to permit the latter arrangement.

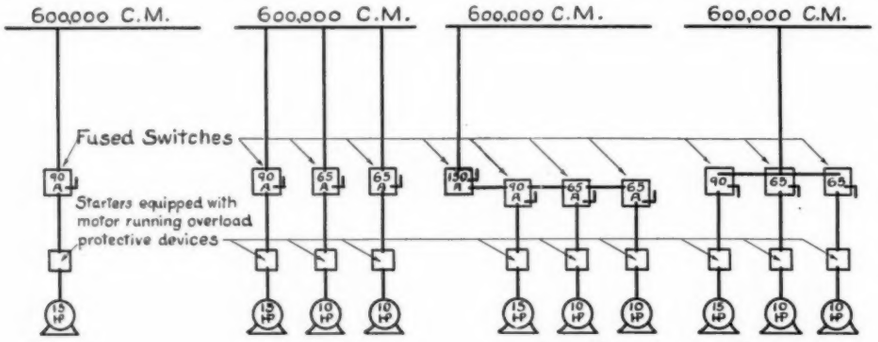


Fig.-1. Fig.-2. Fig.-3. Fig.-4.

Cutouts when used for the protection of conductors serve two purposes: First to protect against overload and second to protect against short circuits and grounds. So far as protection from overload is concerned it is immaterial where the protective device is located in the circuit. For protection against grounds and short circuits the current carrying capacity of the conductors (and in the case of a ground, the conduit) should provide a low resistance path which will cause immediate operation of the overload protective devices next back on the line. Both these conditions are satisfied in the arrangement shown in Fig. 3 just as effectively as in the schemes illustrated in Figs. 1 and 2. The arrangement shown in Fig. 4 is not good practice, as it does not provide individual fuse protection for the tap conductors.

There seems to be a growing tendency to apply this rule not only to motor circuits, but also to circuits supplying lighting and heating appliances. From the standpoint of hazard there would seem to be little reason to discriminate between different classes of loads, as the electrical conditions are identical. Code rules must be consistent and where principles are laid down or exceptions made there should be a logical basis of procedure and so far as possible rules should provide fundamental rather than specific guidance. L. W. Going.

* (Note: Some jurisdictions may take exception to this interpretation and may require the motor running overload protective devices rather than the starting fuses to be within the 25-foot limit).

Supporting Fixtures for Boxes

In the February, 1927, Code Chat attention was called to a questionnaire of the Eastern Association of Electrical Inspectors that returned twenty-three "No" and forty-four "Yes" answers to the question "Do you insist that all fixtures be supported from the outlet box?" This statement then followed: "This indicates in the districts covered by those who voted 'No' that either the inspectors did not know the Code rule or were not enforcing it."

This has brought forth two vigorous denials from inspectors who voted "No," but who claim to know the Code and to be strong for Code enforcement. Their "kicks" are very well founded and the trouble was not with them, but with the questions in the questionnaire. The author of this question had in mind only metal clad wiring systems, but made the mistake of making no reference to same.

Up to the 1925 Code the requirement that fixtures be attached to the outlet boxes was through implication only and not by direct specification. The 1923 Code read as follows:

"*Where no* gas pipe, conduit, or other *fitting which will provide proper support is present*, the fixture shall be attached to a 7/8-in. block fastened between studs or floor timbers and flush with the back of the lathing. Where this method cannot be employed a wooden base block, not less than 3/4-in. thickness, shall be provided."

It is plain then that the Code implied that where the outlet box was present the fixture should be attached to it. About that time the demand for the shallow pan type of fixture was prevalent and many contractors were following the Code recommendation for the use of a 1½-in. deep outlet box. There being no fitting then on the market providing a method for attaching the shallow pan fixture to the deep type of box, the path of least resistance was followed and holes were punched around the rim of the pan and the fixture secured in place by means of wood screws into the lath, leaving the fixture entirely free of the outlet box and ungrounded.

It was soon noticed that the supporting screws frequently did not hit the lath, but were merely caught into the plaster and that within a few months the fixtures became loose and many fixtures became alive.

About that time the 1925 Code revision became effective and the wording of Rule 1403 F was changed to read "Where a gas pipe, outlet box, plate or other fitting which will provide proper support is required by this Code, or is present, the fixture shall be attached thereto; * * *" making the intent of the requirement quite unmistakable.

It took considerable time for the contractors as well as inspection departments to grasp the true interpretation of this section of the Code. The purpose of the question therefore was to ascertain whether inspection departments were requiring compliance with the Code or were still allowing the fixtures to be fastened to the walls or ceiling and not to the outlet boxes.

However, to substantiate Mr. Forsyth's statement, we have taken a summary of the answers received from an "all-metal" territory. Of thirty-two answers from the inspectors in that district eighteen voted "Yes" and fourteen "No." So it is seen that there are some inspectors who know and apply the Code and some who don't.

New Jersey Contractor Keeps Men Busy on Re-wiring

Some Salient Questions Regarding the Work Carried on in This Field by the Morrison-Turbett Organization in South Orange, N. J., Are Answered by Mr. Morrison

WHY do you do re-wiring work exclusively and no new work? We have been doing this type of work some time now and are convinced that it is a paying proposition. In this work we are not subject to the losses that many times occur when a general contractor runs into financial difficulties for one thing. Another is that we are not called upon to do any competitive bidding, which would eliminate us from almost all kinds of new work because our prices are higher than most contractors in this vicinity.

Is there enough work of this kind to keep an organization busy? Yes; we have at the present time ten men on our payroll who are doing nothing else but re-wiring work, and when our season is at its height, late in the fall, we have sixteen or seventeen men going.

What nature of work are you called upon to do? I would say that there is an even distribution between convenience outlets and lighting outlets and switches.

How do you secure this business? We have been established here for twelve years and have come to be known for a high class of work. This reputation has resulted in our being recommended from one customer to another. We are not called upon to do any advertising, and all of our business comes over the telephone or into the store.

When a call comes in for a convenience outlet, let us say, what do you do? We arrange to send Mr. Turbett to the place at once, if he is in at the time the call comes, or we make an appointment for him to interview the owner or person in authority at a time convenient to both. I never go out on such work, my job being here in the store.

Do you give flat prices for this sort of work? Absolutely no. We never give a figure until we have checked the job unless it may be something to the effect that our prices run from such-and-such to such-and-such for that kind of work, but we will not make it definite. We always visit the premises first and prepare an estimate.

How are estimates made? The estimates are made by actually measuring the length of the run to be made, taking into consideration the difficulty of the job, quantities to be used, the time required to complete the work, the overhead and Turbett's time in making the estimate.

Are prices given at once? If the job is a simple one we may give a figure at the time the estimate is made, but usually the figuring is done back at the office and the price is phoned to the customer.

How do your prices compare with your competitors? Our prices range all the way from $9 to $15 per outlet, which is considerably higher than the charge made by some contractors in our neighborhood.

Does price keep your work down? It does not seem to. We give a price and that is our final answer. Not one dime off for cash or any other consideration. If they don't want it at our price that's their business. People want good work and are willing to pay for it.

Why are your prices so much higher than others? Every man in our employ is an expert in his line, and these men must be paid a high wage. Our wiring supplies are all of standard manufacture. Our aim here is to make money, and we are giving nothing away. It costs us, perhaps, more than some others because of our policy of giving the best possible, so we have to charge more for our work to make money.

Have you ever lost work because of price? I don't think so, at least to any great extent. We have had just three protests to our prices since we have been in business and have handled them all on the basis that our work is good; therefore, our prices are high, and we have not lost a customer because of them.

After the estimate is made what happens? If the work is accepted a sketch is drawn of the work to be done and handed to the workman assigned to that particular job. His work is then to get right to work and carry out the instructions given him.

How about his supplies? They are given to him before he starts out and charged against the workman and job. The careful estimating done enables us to reckon pretty well the quantities of materials he will require and can supply him accordingly. There are never any turn-backs to stock to any extent, except perhaps some cable or wire.

After the work is done is it inspected? If you mean by us, no. There is another advantage of careful planning and employing reliable men. We know that the man we send on any given job will carry out his instructions to the letter in a thoroughly workmanlike manner, and there is no need of any follow-up inspection on our part. That's something to think about. If we had to go on up to some house after a job was completed and look it over it would add still more cost to our work.

On additional lighting work can you get the fixture sale? Yes, as a general thing we sell the fixtures from our stock, or secure them for the customer.

Do you get any other wiring business? Very often we are able to point out to a home owner that he could use an extra switch here or there, or possibly a convenience outlet or two, and that means additional work. Then, too, sometimes an appliance sale will result from such contact.

Is this re-wiring business seasonal? Yes and no, I would say to that. During the summer months our business slackens up to a considerable extent with the residents at the summer resorts, but when they return there seems to be a craze for electrical work, and actually from Thanksgiving until Christmas we get to the point where we cannot accept any more work that must be done in any sort of a hurry.

How do you explain this? I never

could figure why the demands should be so heavy at these times. I can see where there would be some increase, but at this time our telephone is going continually with people wanting work done.

Is your work confined to merely an outlet or two in a house? Not at all. Much of our work means completely re-wiring a home or attending to the wiring of an addition that is being built.

Do you absolutely turn down work on new houses? We do unless the owner is a particularly good customer of ours, and then it must not be on a competitive basis. We have wired some of the finest homes in this section in this way. I recall one lady who insisted that we do the work regardless of our price and, incidentally, the architect refused to pass our bill. We went over his head, however, and got our check at once.

Do you do any commercial or industrial re-wiring? Sometimes a customer will be the owner of a business in Newark or one of the nearby towns, and when there is re-wiring work to be done in the plant we are called in. We have secured some very valuable work in this way, but it has always been re-wiring on old buildings.

Have you any particular "stunts" that get business? Nothing except to take unusual care in handling a job to keep down the mess. This appeals to the ladies a whole lot. Our men are instructed to leave a place as they find it and to clean up every trace of work.

Would you advise a contractor to follow this type of work? We have been mighty successful at it, so why can't others do it? Perhaps I should say, however, that our territory here is made up of the homes of New York and Newark business as a general thing and are of a high type.

Letters to the Editor

Red Seal Contractors

To the Editor of The Electragist:

I have just been reading the April number of The Electragist. The first editorial, entitled "The Red Seal and Contractors," has more than the proverbial few grains of truth in it. That there is a brighter side to the picture, however, is shown by the fact that six contractors here have turned in a total of ninety-six applications for Red Seal. One hundred percent support is seldom achieved, but the loyal help of a few will go a long way toward improving conditions for all.

R. G. McPhail
Field Secretary
Electrical League of Rochester

Suggests Way to Eliminate Sub-standard Devices

To the Editor of The Electragist:

The article in the March issue of The Electragsit, entitled "Public Safety Demands Elimination of Sub-Standard Devices," is a very timely and important subject.

The ideas expressed by Mr. J. C. Caine have been in the mind of the writer for some time in conjunction with a state ordinance that the South Dakota association has been working on, although to date nothing definite has been done along this line.

Since there are many of the state organizations working out some plan for a state ordinance, there is no reason why something regulating the sale of first class, reliable electrical appliances cannot be incorporated in such an ordinance. Since the elimination of such devices must eventually be provided for, there is no better place to introduce such an ordinance than with a state ordinance regulating construction and material.

It is very easily seen that a state ordinance controlling the sale of such devices could be enforced and provide the necessary protection, rather than so many individual city ordinances which might have different interpretations. Going further along this same line it would be a great deal better if we had a national board which would provide a code eliminating such devices. This would do away with the separate states adopting various types of conflicting ordinances and leave us *One Code* for the entire country. Such a code in itself would have a tendency to cause manufacturers to cease production of articles not up to a standard. The public could easily be educated to look for a national board stamp or marker on appliances just as it has been on construction material.

We have in operation at the present time an organization known as "Good Housekeeping Institute," which has very good work along this line. At this time they cover some of the major electrical appliances and nearly all the articles now used in the modern home. This organization has appealed more to the women than to the men. From actual experience I have found many women customers that will always look for a Good Housekeeping Institute label when purchasing some major electrical appliance.

This goes to prove that the public not only is being but really wants to be instructed on how to purchase reliable articles for their homes. It shows they have faith and confidence in a standard set by a reliable organization. This same idea could be followed by a national board, covering electrical appliances. The public can be educated to look for the approval stamp on all electrical devices for the home, they being assured by it that they have purchased an article that is well worth its price and will give them the service expected.

Such an ordinance or national board is bound to come in time, but with the assistance and help of every individual Electragist and state association, combined with the assistance of other electrical organizations, the time can be shortened.

I would like very much to see something along this line appear in The Electragist every issue and also have it brought up for discussion at every state meeting. A lively interest by all branches of the electrical industry will soon put it over.

Mark J. Hurlburt.
Chamberlain, S. D.

Rewiring Booklet

(Continued from Page 33)

Ask the Electrician

Why not call up your electrical contractor today and have him plan an extension of your house wiring, so that your home can be provided with enough outlets, arranged to increase your convenience and comfort? Let him give you five, ten, twenty or more new outlets . . . you'll use them all no matter how many you add. How about a special outlet for the iron or the washing machine in the laundry, one for the heater in the bathroom and one for the radio in the living room? Why not more garage and cellar lights, with two-way switches, so you can light your way as you go? Wouldn't this be a good time to put in a power circuit in the pantry for an electric refrigerator and another in the kitchen for an electric range? With new wall lights and floor lamps in your living rooms you can plan for different arrangements of your furniture . . . your easy chair will be out of that dark corner and at your next bridge party your guests won't have to strain their eyes to see what they are playing.

Red Seal Progress

© S.E.D.

Two Red Seal Homes for Hudson Valley

The Hudson Valley Electrical League, Poughkeepsie, N. Y., is planning to demonstrate two Red Seal Homes this spring, one in Beacon and the other in Poughkeepsie. The demonstrations held last year were so enthusiastically received that it was decided to hold them this year in these two cities. The Beacon home will be most modern not only in electrical equipment, but in plumbing, architecture, heating, as well. The house is being built at the present time and will be ready by June, it is expected. The plans for the Poughkeepsie home have not yet been fully developed.

The league has developed a model Red Seal Home for demonstration purposes in store windows, at county fairs, etc. It is now being built and will be wired in accordance with Red Seal standards. Miniature electric fixtures and furniture in the rooms will give it the appearance of a real, livable home.

Colorado's Red Seal Changes Have Been Approved

The proposed changes in the minimum Red Seal specifications recently adopted by the Red Seal committee of the Electrical League of Colorado have been approved by the Society for Electrical Development.

These changes are:

BATHROOM: A single, instead of a duplex, convenience outlet will be permitted in the same gang with wall switch.

COAL BIN: In the past this has been considered an enclosed space in the basement, and as such required a wall switch for control of the ceiling or bracket light. It is now recommended that this lighting outlet be equipped with a pull socket receptacle located just inside the entrance.

SERVICE SWITCH: The 60-amp., 3-pole, 250-volt type is recommended, but no longer required.

SERVICE MAINS: A minimum of three No. 6 wires is recommended, but not required. The new requirement is that service mains shall be large enough to provide for full capacity of all circuits in use plus such spare circuits as are specified in the Red Seal Plan. (One spare circuit for each five or fraction actually used.)

SERVICE CONDUIT: Shall not be smaller than one and one-quarter inches. It is realized that this conduit will permit the installation of three No. 3 wires should the owner desire to provide for heavy-duty appliances at a later date.

Red Seal Shows Progress During March

The figures for the Red Seal activity for the month of March, issued on April 15 by the Society for Electrical Development. show a total of 197 applications for approval and 121 awards. The totals for the first three months of the year were 531 applications received against 363 awards during that period.

The Electric League of Pittsburgh and its seven affiliated leagues showed the largest number of applications for March, their number being 50. Detroit was second with 28. The highest among the awards made was California with twenty-five.

Toronto's Red Seal Figures Show Gain

G. W. Austen, manager of the Electric Service League, Toronto, has announced that of the number of dwellings erected in the first three months of 1927 50 percent were Red Seal Homes, whereas for the first three months of 1926 20 percent were Red Seal. In 1927 permits for this period were 308 dwellings, of which 152 were Red Seal. In 1926 422 permits were issued, 84 of them being reported Red Seal.

Billboard Advertising in Chicago

The Electric Association of Chicago has started a billboard advertising campaign on Red Seal, and has now 160 boards in use. The electrical leagues in Muskegon and Denver have been contemplating the use of the same medium, while the league in Richmond, Va., is considering the use of cards in the street cars for the same purpose.

Kansas City Club Lists Red Seal Infractions

THE Kansas City Electric Club has sent a letter to architects and builders listing some of the common oversights and omissions which have prevented many of the houses from being listed as Red Seal Homes. It is hoped that this letter will clarify in the minds of the architects and builders just what Red Seal specifications mean and will help eliminate refusals of the seal. They are indicated below:

REAR ENTRANCE—Needs an outside light controlled by a switch inside.

OUTSIDE PORCH—Needs a duplex convenience outlet, unless the porch is less than 100 sq. ft. floor area.

LIVING ROOM—The most used room, the one from which visitors and friends form lasting impressions. It needs more wiring than any other room. A size 12 by 22 or thereabouts needs not less than four duplex convenience outlets, placed either in the baseboard or a few inches above it. Where the two main entrances are over 10 feet apart the ceiling light if used, otherwise at least two bracket lights, should be controlled by 3-way switches from those entrances.

DINING ROOM—Needs at least two duplex convenience outlets. Same 3-way switch provision as living room.

VESTIBULES—Light should be controlled by wall switch.

GARAGE—Needs a duplex convenience outlet. A two-car garage needs a light over each car space, preferably over the hood of car.

BEDROOMS—If bracket lights are used instead of a ceiling light at least two brackets should be controlled by wall switch; it would be even better to place them all on the switch; then any combination of individual or joint control could be had. Large bedrooms, around 15 by 10 and up, need three duplex convenience outlets at least. Smaller bedrooms need at least two.

BATHROOM—In all except the largest the lighting should come from a wall bracket on each side of the mirror, these brackets controlled by a wall switch at the entrance door. Don't forget a duplex convenience outlet, placed preferably at right of the lavatory and about three feet above the floor.

The Electragist

Official Journal of the
Association of Electragists—International

S. B. WILLIAMS
Editor

C. A. REITER
Engineering Editor

Leaders Wanted

The men who years ago were active in forming local, state and national associations are still the wheel horses in many places. It is fine that we have those men to lead us, but are we not leaning too heavily on them?

We will not have these men with us so very long. What then? Where are the young men who will take their places? Who is encouraging our young men to become active in association work?

Of course, business has grown tremendously and detail has piled up. Someone must stay at home and keep everything running smoothly. Sooner or later, however, these now young men will have to take over the reins of association work. How much better fitted they would be if they were encouraged to get into this work by their superiors.

If the contracting business is to keep its place in industry councils it must have association leaders. We need men of vision, men of judgment, men capable of expressing themselves, men able to make decisions. We have such men in the electrical contracting business. Why haven't more of them become active in association work? Is it modesty, or is it perhaps because our leaders of many years have neglected to give them the proper encouragement?

Electrical Field Service

We have completed two years of electrical field service work on the National Electrical Code and since anniversaries appear to be a fitting time to balance books and find out where we are going perhaps it might not be amiss if at this time we look into the accomplishments of this service.

The electrical field service work came into being as the result of so many ordinances and local rules that were at variance with the National Electrical Code and with each other. Why did this variation exist? Did local administrators feel their own importance to the extent that the only rules that were any good were those they devised or was the National Electrical Code behind times?

It is true that some of the first was found, but not enough to be alarming. Enough of the second was brought to light, however, to make it apparent that never will our Code be a truly National Code until the sound viewpoints of the local administrator are adequately embodied therein.

Up to this time the Code revisions have come as the result of the viewpoint of the revising body. Now the field service department brings to the Electrical Committee the field thinking and views, and the Electrical Committee reviews these ideas, amplifying or cutting where necessary. The result? A working Code.

Moreover, the Code has always been primarily an insurance code—a code by which to criticize existing installation—a code to cut down fire losses. Through the field service the views of the electrical industry have more of an opportunity to get recognition. Result? We have definitions governing proper use in proper location. we have recognition of economics.

The field service has filled a big need. It has started the inspectors to thinking nationally, it is breaking down sectionalism, it is broadening the scope and purpose of our Code.

There is no criticism of the Electrical Committee's work as formerly set up. Those men worked honestly and without any thought of reward. The field service is the tool that they have so badly needed.

In two years a tremendous amount of good has been accomplished. The results of the next year will be greater still.

Washington Devereux

The electrical industry, and more particularly Philadelphia, mourns the passing of Washington Devereux. For thirty-seven years he administered the inspection of interior wiring for the Philadelphia Fire Underwriters' Association and such was the respect for his work that Philadelphia has never had a wiring ordinance.

As a youngster he was a cabin boy. In spite of the fact, however, that in the formative years he had contact with the rougher side of life, as a man he was gentle and filled with a desire to do kindly things. He was one of the first in the electrical industry to preach friendliness and what he talked about he exemplified personally.

The Electrical Conference which prior to his first illness three years ago had come to require the largest hall in Philadelphia to accommodate the regular monthly meetings was solely his own accomplishment.

One of his pleasures was to make real contractors out of promising young fellows who had gone into business for themselves. In fact, he seemed to feel that it was as much a part of his job to improve conditions in the contracting business as it was to assure the public of safe wiring.

For years he was a member of the Electrical Committee of the N. F. P. A. and the results of his famous Question

Box in Philadelphia have found their way more than once into National Electrical Code revisions.

Washington Devereux was another of those wonderful men who, for reasons never wholly understood, were attracted to the work of electrical inspection and in spite of the modesty of the income continued to work with ever increasing enthusiasm.

Inspectors' Organization

For the past two years or more it has been proposed with increasing vigor that the inspectors form a national organization. Unfortunately no one seems empowered to do anything, so that while everybody agrees that it is the thing to do, nobody does it.

At present the inspectors are splendidly organized in certain localities and are doing a constructive job. There should, however, be some national body to speak for the inspectors and correlate the sectional work.

Nationalization of the Code, uniformity of interpretation and what is more important the presentation of the inspector's viewpoint to the electrical committee, officially and in a manner that no one can dispute—these are jobs for such an organization.

Besides, such an organization will give the inspector the national identity he needs and will provide him an opportunity to take his rightful place in industry councils.

Much of the work will, of course, be voluntary, but the greatest good will come when such a body is set up with a paid secretary who is fully conversant with the problems and thinking of the electrical inspector.

We hope that such a set up will not be long forthcoming.

The Sign of a Contractor

According to the new ordinance of New Orleans a contractor must display a sign on his established place of business and have someone on duty at regular business hours capable of transacting business with the electrical inspection department.

These clauses may or may not be good law, but the second is good business for the contractor, while the first clause is of interest because it is a step to protect the public against the "in-and-outer" or "floater." In New Orleans a man in order to engage in the electrical contracting business must have a place of business. It may be his home or some other place, but wherever it is he must hang out a shingle.

The Building Contractors' Credit

The attention of electrical contractors is called to the unhealthy condition in the real estate market and its possible effect on the credit of the general contractor. There are two kinds of builders whose operations should be very carefully scrutinized before doing work for them: The first is the builder of speculative houses to sell and the second is the builder of speculative structures to rent.

Just at present money is very free. There is lots of it that is unemployed and mortgages are easier to arrange in many places than formerly. Even so, if the houses won't move except at a sacrifice and the buildings won't rent, somebody must pay the bill.

The sub-contractor is therefore warned to investigate before he goes ahead. Where such conditions have occurred in the past the sub-contractor who would take the chance lost all.

Bonds, stocks, mortgages—these will be offered in payment. If so, it is well to find out what they are worth in the market and accept them at that value. To accept them at par is to take a loss or tie up one's working capital.

Local associations of electrical contractors will find a most fruitful effort during the next year or two in checking up the credit of the speculative building operators. Where this is done carefully the members will find that they will be saved a lot of grief. The information may be had by pooling the experience of members, from building contractors and other sub-contractors, from the bankers and mortgage companies.

Interest In Motor Sales

The desire of the electrical contractor to regain the position he once held in the retail market for motors is manifesting itself in a number of places. In New York City the contractors through the Electrical Board of Trade have discussed distribution policies with a number of manufacturers. For some months they have been engaged in working up suggestions of ways to make motor sales more attractive to contractors.

The Southern California Electragists have started a motor group and have in mind talking over their problems with representatives of individual manufacturers in turn. Correspondence with the Milwaukee Association of Electrical Contractors and Dealers shows tremendous interest there. There are probably other places as well that are working on this problem.

The contractors have suffered the manufacturers and jobbers to come in and take the retail motor business in a most ruthless and unfair manner. It has not only cost the contractors motor business, but frequently the wiring business as well.

Complaining has been of no avail and now the contractors are beginning to wake up to the fact that it isn't the contractor who needs education, but the motor manufacturer. Hardly a motor manufacturer is making a profit, all because of their mad scramble for business.

The contractors are now endeavoring to teach the local agents that the road to profit is not through direct selling except where the buyer is going to incorporate the motor in some other machine for resale. When the motor manufacturers learn that lesson the contractors will regain their rightful position as the major outlet for retail motor sales.

If more cities would follow the lead of those mentioned the motor manufacturers might not take so long to learn this lesson.

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State	President	Secretary
British Columbia:	C. H. E. Williams, 509 Richards St., Vancouver	J. C. Reston, 579 Howe St. Vancouver
Alabama:	J. R. Wilcox, 2017 First Ave., Birmingham	D. B. Clayton, Am. Trust Bldg., Birmingham
Arkansas:	Ed. Appler, 901 Central Ave., Hot Springs	Clem. Dresse, 316 Louisiana St., Little Rock
California:	C. L. Chamblin, 687 Mission St., San Francisco	Northern Division Edward Martin 182 Fifth St., San Francisco Southern Division C. J. Geisbush, 610 Cotton Exchange Bldg., Los Angeles
Colorado-Wyoming:	Matt Whitney, Colorado Springs	P. Harry Byrne 965 Madison St., Denver
Florida:	W. S. Monroe, 308 Cass St., Tampa	P. F. Lyons P.O. Box 992, Tampa
Illinois:	Edgar Rice, 207 East Broadway, Alton	John Kuhlemeyer 1317 S. Sixth Ave., Maywood
Indiana:	F. O. Broyles, 119 W. Fourth St., Marion	Ralph Brassie 639 Main St., Lafayette
Iowa:	Earl N. Peak, 1603 W. Main St., Marshalltown	J. R. Payton, 13th & Walnut Sts. Des Moines
Kansas:	L. M. Atkinson, 116 E. First St., Pittsburgh	Harry Hagler Salina
Louisiana:	Robley S. Stearnes, 624 Carondelet St., New Orleans	I. G. Marks, 323 Chartres Street, New Orleans
Maryland:	A. C. Brueckmann, Keyser Bldg., Baltimore	W. D. Young, Calvert and Franklin Sts., Baltimore
Michigan:	W. F. Fowler, c-o Barker-Fowler Electric Co., Lansing	E. P. Blackman, c-o Motor Shop, Battle Creek
Missouri:	Charles J. Sutter, 1227 Pine St., St. Louis	W. F. Gerstner, 120 North Second St., St. Louis
New Jersey:	Henry M. Desaix, Paterson	Robert Beller, Newark
New York:	A. Lincoln Bush, New York City	H. F. Janick, 235 Berlin St., Rochester
North Carolina:	H. R. Bouligny, Charlotte	W. P. Christian, Greensboro
Pennsylvania:	W. V. Pangborne, 1927 W. Montgomery Ave., Philadelphia	M. G. Sellers 1202 Locust St., Philadelphia
South Dakota:	Mark J. Hurlbut, Chamberlain	Frank Shuff, Yankton
Tennessee:	R. L. Clift, Memphis	J. A. Fowler, 118 Monroe Ave., Memphis
Texas:	T. L. Farmer, 1809 Main St., Dallas	J. W. Read, 715 Capitol Ave., Houston
Wisconsin:	L. W. Burch, 202 E. Wash'n Ave., Madison	

List of Local Associations

STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS
ALABAMA		
Birmingham (C)	J. R. Wilcox	2017 First Avenue
ARKANSAS		
Fort Smith (C)	Edward Ryan	Ft. Smith Lt. & Trac. Co.
CALIFORNIA		
Fresno (C)	Clyde L. Smith	1162 Broadway
Glendale (C)	W. L. Hyde,	154 S. Brand Blvd.
Long Beach (L)	V. Ringle	So. Cal. Edison Co.
Los Angeles (C)	Helen I. Mikesell	1009½ S. Hill St.
Oakland (C)	Laurence R. Chilcote	Hobart & Webster Sts.
Pasadena (C)	H. W. Barnes	1331 N. Lake Ave.
Sacramento	L. W. Sherman	910 Ninth St.
San Francisco (C)	E. E. Browne	522 Call Building
Santa Ana (C)	O. N. Robertson	303 N. Main St.
Eureka (C)	J. H. Hilfiker	1717 H Street
COLORADO		
Colorado Springs (C)	Matt Whitney	208 N. Tejon St.
Denver (C)	E. C. Headrick	89 Broadway
Pueblo (C)	E. F. Stone	So. Colorado Power Co.
CONNECTICUT		
Hartford (C)	A. A. Angello	473 Park St.
Waterbury (C)	D. B. Neth	107 West Main St.
Bridgeport (C)	L. E. Finch	529 Newfield Bldg.
DIST. OF COLUMBIA		
Washington (L)	P. A. Davis	1328 Eye St., N. W.
FLORIDA		
Bradentown (C)	W. S. Stewart	W. & S. Elec. Co.
Daytona Beach (C)	C. Leotah Benson	324½ S. Beach St.
Deland (C)	C. W. Allcorn	132 No. Florida St.
Fort Myers (C)	P. K. Weatherly	Thompson-Weatherly Co.
Indian Riv. Dist. (C)	I. O. Page	Vero Beach
Jacksonville (C)	W. A. Harper	22 Laura St.
Miami (C)	E. A. Robinson	118 N. W. First Ave.
Orlando (C)	Solon M. Lantz	833 E. Concord
St. Petersburg (C)	Gardiner Blackman	.....
Tampa (C)	P. F. Lyons	P. O. Box 992
GEORGIA		
Atlanta (C)	B. K. Laney	73 Walton St.
Savannah (L)	Sylvan M. Byck	Byck Electric Co.
ILLINOIS		
Chicago Electrical Contractors' Association	J. W. Collins	160 No. LaSalle St.
Master Elec. Contractors' Association	F. J. Boyle	304 S. Halsted St.
Decatur (C)	Earl Weatherford	114 East William St.
Granite City (C)	William W. Huxel	1418 Niedringhaus Ave.
Peoria (C)	L. B. Van Nuys	238 So. Jefferson St.
Rockford (C)	Donald Johnson	106 North Second St.
Springfield (C)	A. D. Birnbaum	916 West Cook St.
Wheaton (C)	E. C. Krage	133 West Front St.
INDIANA		
Lake County (C)	A. R. Irwin	3461 Mich'n Av., Ind. Har.
Indianapolis (L)	A. W. Cruge	2405 E. Tenth St.
Michigan City (C)	Walter A. Sassodeck	913 Franklin St.
Muncie (C)	Harry McCullough	113 W. Howard St.
South Bend (C)	R. A. Frink	1338 Howard St.
Terre Haute (C)	C. N. Chess	523 Ohio St.
IOWA		
Cedar Rapids (C)	H. E. Neff	94 First Ave., West
Davenport (C)	Louis F. Cory	510 Brady St.
Des Moines (C)	R. C. Trembath	Bankers' Trust Bldg.
Fort Dodge (C)	J. A. Paul	16 So. Twelfth St.
Sioux City (C)	E. A. Arzt	211 Fifth St.
Waterloo (C)	R. A. Cole	Cole Bros. Elec. Co.
KANSAS		
Salina (C)	C. G. Loomis	814 Cedar St.
Wichita (C)	P. W. Agrelius	Wichita
KENTUCKY		
Lexington (C)	J. H. Brock	235 East Main St.
Louisville (C)	C. L. W. Daubert	921 South Third St.
Paducah (L)	K. H. Knapp	c|o Paducah Electric Co.
LOUISIANA		
New Orleans (C)	I. G. Marks	406 Mar. Bk. Bldg.
Shreveport (C)	R. L. Norton	620 Marshall St.
MARYLAND		
Baltimore (C)	A. P. Peterson	511 Cathedral St.
MASSACHUSETTS		
Lowell (C)	George A. Ryan	79 Middle St.
Haverhill (C)	H. W. Porter	14 West St.
Malden (Medford, Everett and Melrose) (C)	H. J. Walton	c|o Malden Electric Co.
Springfield (C)	C. S. Foster	220 Dwight St.
Worcester (L)	John W. Coghlin	259 Main St.
MICHIGAN		
Detroit (C)	N. J. Biddle	112 Madison Ave.
Grand Rapids (C)	T. J. Haven	1118 Wealthy St., S. E.
Kalamazoo	E. R. Hummel	1121 Seminary St.
Saginaw (C)	E. T. Eastman	209 Brewers Arcade
MINNESOTA		
Duluth (L)	Morris Braden	c-o Minn. Pow'r & Lt. Co.
Minneapolis (C)	W. I. Gray	209 Globe Building
MISSOURI		
Kansas City (C)	A. S. Morgan	4 E. Forty-third St.
St. Louis Electragists' Ass'n (C)	W. F. Gerstner	120 No. Second St.
Electric Employers' Association (C)	G. L. Gamp	Wainwright Bldg.
NEBRASKA		
Lincoln (L)	George Ludden	1329 N Street
Omaha (C)	E. H. Brown	1818½ Harney Street
NEW JERSEY		
Long Branch (C (Asbury Park and Red Bank)	Austin Hurley	Campbell Ave., Long Branch
Newark (C)	Paul H. Jaehnig	435 Orange Street
Philipsburg (See Lehigh Valley, Pa.)		
NEW YORK		
Buffalo (L)	W. E. Prosser	87 W. Tupper St.
Brooklyn (C)	H. F. Walcott	60 Third Avenue
Jamestown (C)	Henry M. Lund	309 Main Street
Nassau-Suffolk (C)	Henry T. Hobby	55 Front Street, Rockville Centre, L. I.
New York City		
Section No. 1 (C)	M. J. Levy	70 East 45th Street
Independent (C)	Albert A. A. Tuna	127 East 34th Street
Metropolitan (C)	George W. Neil	96 Beekman St.
Niagara Falls (C)	E. M. King	515 Niagara Street
Rochester (C)	Theo. T. Benz	278 State Street
Schenectady (C)	Richard Spengler	421 McClellan Street
Syracuse (C)	Fred P. Edinger	802 East Water St.
Utica (C)	W. C. Ballda	228 Genesee Street
Westchester Co. (C)	Jack Lalley	14 Mnr. Hse.Sq.,Yonkers
Yonkers (C)	Louis Mayer	485 South Broadway
OHIO		
Akron (C)	E. C. Rishel	540 East Avenue
Canton (C)	H. S. Hastings	301 New Vickery Bldg.
Cincinnati (C)	J. F. Riehle	1642 Cedar Ave.
Cleveland (C)	F. T. Manahan	Chester Twelfth Bldg.
Columbus (L)	O. A. Robins	1242 Oak Street
Toledo (C)	Fred C. Dunn	Builders' Exchange
Dayton (C)	Clarence Carey	1107 South Brown St.
Massilon (C)	F. D. Mossop	c-o Mesco Electric Co.
Northern Ohio (C)	R. A. Wentz	Elyria
OKLAHOMA		
Pawhuska	C. G. Sego	Pawhuska
OREGON		
Portland (C)	J. R. Tomlinson	51 Union Ave. N.
PENNSYLVANIA		
Altoona (C)	Walter Bracken	Leechburg
Allegheny Valley	E. G. Jackson	12 West Third Street
Du Bois (C)	C. E. Blakeslee	11th and French Sts.
Erie (C)	R. D. Goff	1605 N. Third Street
Lehigh Valley (C)	A. W. Hill	Bethlehem
Philadelphia (C)	M. G. Sellers	1202 Locust Street
Pittsburgh (C)	Fred Rebele	1404 Commonwealth Bldg.
Wilkes-Barre (L)	Ambrose Saricks	25 No. Main Street
RHODE ISLAND		
Providence (C)	H. E. Batman	36 Exchange Place
SOUTH CAROLINA		
Charleston (L)	J. P. Connolly	141 Meeting Street
SOUTH DAKOTA		
Sioux Falls	H. W. Claus	326 S. Phillips Ave.
TENNESSEE		
Chattanooga (L)	P. W. Curtis	725 Walnut Street
Knoxville (L)	Jerry G. Cason	303 West Church St.
Memphis (L)	J. J. Brennan	12-16 So. Second St.
Nashville (C)	J. T. Shannon	c-o Electric Equip. Co.
TEXAS		
Beaumont (C)	J. A. Solleder	Houston & Bolivar Sts.
Dallas (C)	P. B. Seastrunk	2032 Commerce St.
Houston (C)	J. W. Read	715 Capitol Avenue
UTAH		
Ogden	B. Kristofferson	2249 Washington Ave.
Salt Lake City (C)	C. Louis Collins	215 Kearns Bldg.
VIRGINIA		
Lynchburg (C)	J. L. Fennell	c-o Fennell & App
Norfolk (L)	A. W. Cornick	200 Plum St.
Richmond (C)	E. M. Andrews	15 N. Twelfth Street
WASHINGTON		
Seattle (L)	P. L. Hoadley	Seaboard Building
Spokane (C)	William Stack	W. 1121 Cleveland St.
WEST VIRGINIA		
Wheeling	Peter J. Erb	1414 Eoff St.
WISCONSIN		
Green Bay (C)	V. E. Grebel	531 S. Broadway
Madison (C)	L. A. Ring	2017 Winnebago St.
Milwaukee (C)	E. H. Herzberg	1604 Wells Street
Racine (C)	Joseph J. Small	1910 Linden Ave.
CANADA		
Montreal (C)	George C. L. Brassart	674 Girouard Ave.
Toronto (C)	J. A. McKay	302 Excelsior Life Bldg.
Vancouver (C)	J. C. Reston	579 Howe St.
Winnipeg (C)	Fred Ball	300 Princess St.

(C) designates exclusively Contractor-Dealer organization.
(L) designates an Electrical League.

APRIL ACTIVITIES

Interpretations Committee Now at Work

The Special Committee on Interpretations of the Electrical Committee of the National Fire Protection Association, which was recently organized to hand down code interpretations upon request, has already received two queries, according to A. R. Small, its chairman. One of these queries is from a manufacturer and has to do with a compensator problem and the other deals with a wiring difficulty. It came from the electrical inspection field. When a decision has been reached the findings will be made public.

Fort Wayne Again Wars on Sub-standard Goods

The ordinance recently passed by the City of Fort Wayne, Ind., prohibiting the sale of sub-standard electrical material and which was later rescinded as being too drastic after protests were made by manufacturers of unapproved appliances, has been held by the legal department of the city to be unenforceable. The department ruled that they cannot condemn any property lacking the label of any association not officially recognized by the Federal Government.

The authorities, led by Chief Inspector Thiel, have been able, however, to overcome this obstacle by acting under the state police power law, which permits the condemnation of all sub-standard material, supplies and appliances, and prohibits the sale and use of anything of a hazardous nature. Through this law they are able to carry on their stock inspection.

The authorities have adopted the standard set forth by the National Board of Fire Underwriters as the local standard, and everything not having the Underwriters' label must have local approval before being offered for sale or put into use.

Mr. Thiel states that he has not given up the fight for the Underwriters' label and is elated over his success in getting permission to carry on the local inspection of stock. His next step, he says, is to secure sufficient help to make possible a smooth-running organization for this branch. There is a test case now being arranged to obtain support to the recent ruling.

Fined for Sub-standard Appliance Sales

The ordinance against the sale of unapproved electrical appliances in Portland, Ore., was recently invoked in causing the arrest of the manager of the Woolworth store there who was offering a toaster for 15 cents. Deputy Electrical Inspector Caine was the complainant, and the court imposed a fine of $25 for the offense with an order to cease selling these appliances at once. He further ruled that all who had purchased the contrivances might recover their money upon application at the store, and that the failure of the store management to return it would result in further fines.

Caine said that the toaster was the most dangerous life and fire hazard he had ever seen in Portland.

New Laws Are Discussed by Illinois Electragists

Almost every electrical contractors' local in Illinois was present at the one-day meeting of the Illinois Electragists held in Peoria on April 7 for the purpose of considering the proposed inspection and registration acts now pending before the state legislature.

Previous acts having been declared unconstitutional, every city in the state is without power to enforce inspection. Two acts, one providing for inspection and the other for registration of contractors with an annual fee of $50, are being sponsored by the Electric Association of Chicago. They represent, however, the results of many discussions by representatives of all branches of the industry from different parts of the state. The bills are being fathered in the legislature by Senator Thurlow G. Essington, who was the principal speaker at the Electragists' meeting.

The Illinois Electragists endorsed both bills and went on record as urging the members to get behind the bills. The discussion brought out that while the bills were not all that every one desired, some compromises had to be made and that it was better to get such a compromise on the statute books now than to permit the present disorganized state to continue.

The morning and most of the afternoon sessions were given over to the proposed legislation, after which a number of speakers dwelt on several phases of association work and the necessity for a strong organization. A banquet was held in the evening.

Edgar Rice of Alton, president of the state association, presided, and the speakers included, in addition to Senator Essington, L. A. Mayer, executive committeeman of the Association of Electragists, Great Lakes division; S. B. Williams, editor of THE ELECTRAGIST; D. A. Fleming, field representative of the international association; W. Bourke Cochran, manager of the Electric Association, Chicago; A. P. Good, chairman of the wiring committee, National Electric Light Association; Harry Kirkland of the Society for Electrical Development; T. Walter Collins, secretary Chicago Electrical Contractors' Association, and John Kuhlemeyer, secretary of the Illinois Electragists.

Northwest Inspectors Form New Committee

The Northwest Association of Electrical Inspectors has set up a Code Clearing House Committee in order that the association may properly function with the work of the N. F. P. A. electrical field secretary. L. W. Going of Portland, Ore., will head that committee and his duties will be to receive recommendations for code changes from members and allocate them to the proper committees in order that the electrical field secretary may have the benefit of the thinking of the inspectors of the Northwest.

The association's next convention will be held in Seattle on January 24, 25 and 26, 1928.

Los Angeles to Have a "Better Home"

The trade associations of the city of Los Angeles, Cal., are making preparations for a "Better Home Week," in cooperation with the Better Homes Campaign. The electrical contractors and dealers' association will attend to the wiring of the home, which will be done under Red Seal specifications, and arrangements are being made to have a representative in the home throughout the week to answer any questions concerning its electrification. A drawing was held to determine which member of the association would handle the wiring job for the home, which is to be constructed on Fifth Street at the corner of Figueroa.

Virginia Electrical Men Form League

The Electrical League of Northern Virginia is the name of a newly organized body made up of electrical men of Arlington and Fairfax Counties, Virginia. Central station men, contractors and dealers, and municipal electrical inspectors in that section have joined the association. The Virginia Public Service Company broached the idea of the league at a luncheon held some time ago and the idea was immediately accepted by all branches of the industry. Since that time weekly luncheons have been held.

The constitution and by-laws of the Electrical League of Washington have been used as a model for the rules of the new organization, and members of the league in the District of Columbia have been of great assistance to the Virginia men in getting things under way.

J. Kent White of Alexandria is president of the league and the secretary is N. F. Lawler, 542 King Street, Alexandria.

Iowa Electragists to Hold Co-operative Meeting

A two-day meeting to promote the co-operative movement that has been started by the organization will be held by the Iowa Association of Electragists at Sioux City on May 16 and 17. The program has been prepared with a view to aiding this movement among the contractors, jobbers, manufacturers and central stations of the state.

S. B. Williams, editor of THE ELECTRAGIST, will address the gathering on "What a Co-operative Program Means to the Electrical Industry," and the other speakers will take up various phases of such an activity. Representatives will be present from all branches of the industry.

Kansas City Cleans Up Radio Advertising

The radio division of the Kansas City Electric Club has made public the standards for radio advertising which it has worked out in connection with the Better Business Bureau in that city. The standards eliminate the objectionable features that creep into advertising in the radio field from time to time, and the club urges the dealers to be guided by the principles laid down. Adherence to these standards will show results on the right-hand side of the ledger, the announcement states.

Kansas Electragists Meet This Month

A meeting of the Kansas Electragists, at which it is hoped every electrical contractor and contractor-dealer from Atchison and surrounding towns will be present, will be held in that city on May 16. Efforts are being made to carry news of the meeting to these men, and a larger attendance than the record established at the Wichita gathering in February is expected.

R. C. Hill, field director of the A. E. I., will address the meeting.

California Electragists Hold a Two-Day Convention

The fifth convention of the Southern Division, California Electragists, was held the latter part of April at Hotel Lebec, Del Monte. Business meetings were held the second day of the meeting, both morning and afternoon sessions being planned.

New Orleans Ordinance Has Interesting Features

THE electrical ordinance which recently became effective in the City of New Orleans requires all work to conform to the most approved methods of construction for safety to life and property, and provides that compliance with the regulations as laid down in the National Electrical Code and List of Inspected Appliances of the Underwriters' Laboratories be accepted as prima facie evidence of such most approved methods. A certain area of the city known as the congested area is reserved for only steel conduit, armored cable, metal raceway and fiber duct under-floor systems, says an announcement of the provisions of the ordinance. The ordinance takes cognizance of the fact that other than steel raceway systems may be developed and are now in use to some extent by the following sentence: Special permission may be given to use approved non-metallic raceway systems. In the city in general any class of work that conforms to National Electrical Code requirements is considered approved construction.

The new ordinance requires also that applicants for licenses, either Class A for master electricians or Class B, which entitles the holder to engage in the business of installing electrical fixtures, to be at least 21 years old, of good moral character and shall have had five years' practical experience. Graduates of technical colleges or recognized trade schools must have one year's practical experience.

The ordinance also provides that contractors must display a sign on their place of business and have some one on duty at all regular business hours who is capable of transacting business with the electrical inspection department. It provides further that before a contractor may be granted a license under the act he must show that he has paid all other city and state licenses provided by law.

In the case of responsibility for electrical construction the contractor and the owner are held responsible until a certificate of approval has been issued to cover the equipment. After the certificate is issued the owner or occupant who has the meter in his name is held responsible for electrical conditions on the premises.

Another interesting point provides that each room or subdivision of a building shall be wired for at least one watt per square foot of floor space.

Japan Uses Our Symbols

The standard wiring symbols which were initiated by the Association of Electragists and later became an American Engineering Standard have found

電氣設備
標準シムボル

their way into use in Japan. The accompanying illustration is taken from a page in an electrical handbook prepared by Dr. Keiji Ito, consulting engineer of Tokio and managing director of Denki Fukyukai, which in Japan corresponds to our Society for Electrical Development. It shows our standard symbols with the "meaning" of each in the Japanese language.

Wisconsin Electrical Inspector Starts New Firm

A. C. Schultz, who has been with the Wisconsin Inspection Bureau for twelve years as electrical engineer and inspector, severed his connection there on May 1 to enter the electrical engineering and contracting field. His firm will be Schultz & Fuhr, Inc. Mr. Schultz has been a member of the Milwaukee Electrical Examining Commission of the Department of Building Inspection for the past seven years, three of which he has acted as chairman. He is also a member of the Wisconsin Electrical Code Interpretation Committee, and served on the committee which inaugurated and introduced the first electrical code as an ordinance in the city of Milwaukee. He is also active in the work of electrical associations and societies.

Birmingham Electragists Elect Officers

The Birmingham Electragists, Birmingham, Ala., recently organized, have elected the following officers: A. P. Bagby, Bagby Elevator and Electric Company, president; C. S. Dyer, Alabama Supply Company, vice president; J. R. Wilcox, Wilcox Electric Company, secretary-treasurer. Membership in the Association of Electragists, International, is requisite for local membership. The organization is now laying out a constructive program of local activities.

New Display Material of the S. E. D.

Electrical retailers desirous of making a special effort to sell more electrical things as bridal and fourth (electrical) wedding anniversary gifts will be interested in material which the Society for Electrical Development has available to aid them in preparing window displays. This material consists of a life-size bridal figure, lithographed in five colors, with easel back; a smaller window display panel, 21½ in. by 31 in. in ten colors; some special newspaper advertisements and feature stories for use in local newspapers. The design of the smaller panel is also available in poster form, suitable for hanging in windows and on walls in store and office, also in plain sheet form for framing and pasting inside the window. The slogan "Give Her an Electrical Gift" appears on the window display panel, poster, plain sheet and figure.

This material can be obtained from the Society for Electrical Development, 420 Lexington Avenue, New York City.

Merchandising Dinner of Varied Interests

The Hudson Valley Electrical League was one of the cooperating organizations in the merchandising dinner held recently in Poughkeepsie, N. Y. This was the first meeting of the kind, and it was addressed by John J. Miller, a prominent Chicago merchandising man, who stressed the importance of developing the city from within rather than from without, basing all plans on the realization that unless a city's merchandising establishments are on a sound basis the community is bound to suffer. Committees on different phases of merchandising have been appointed, one of which deals with store window lighting.

Recent Changes Made in League Secretaries

Several changes have been recently made in secretary-managers of the electric leagues in Milwaukee, Akron, Washington, D. C., and Albany, N. Y. J. S. Bartlett has been appointed secretary-manager of the Electrical League of Milwaukee. The new secretary-manager of the Electrical League of Akron is Robert E. Powers, a former newspaper man. C. D. Gallagher and C. J. Bernhardt are respectively the new executives at Washington and Albany.

Brooklyn Electragist Visits the Orient

George Weiderman, of the George Weiderman Electric Company, Brooklyn, is here shown riding in one of Tokio's famous 'rickshaws during his recent tour of the Orient accompanied by Mrs. Weiderman.

"Modern Applianced Home" for Syracuse

Under the direction of the appliance section of the Syracuse Electric League a house fitted up with a full complement of electrical appliances has been opened to the public for a period of two weeks. The league made arrangements with a local builder for one of his new houses for the purpose.

The house was called a "Modern Applianced Home" inasmuch as it was

equipped with the modern electrical conveniences that should be found in every moderate priced home of today. A competent corps of lady attendants was on hand during the hours the house was open to the public to demonstrate the convenience, comfort and economy of the various appliances, and a booklet was prepared for distribution to visitors.

Florida Electragists Meet at Daytona

Members from many cities of the state attended the recent meeting of the Florida Association of Electragists held at Daytona in the interest of the new electrical bill which is now pending in the legislature of that state.

W. S. Monroe, president of the association, made a plea to the members to take their business seriously and develop a spirit of cooperation with the other branches of the industry to the common good. He said in part:

"I would like to impress on electrical contractors in this state that no matter how much they may strive individually to better conditions they can only accomplish individual results, but if they all act together it is certain that they can accomplish their objective. You all know that people who are striving for some thing must do their own fighting, and I may say that most members of the state association are fighting for better conditions and those who do not come in with us are taking the attitude of letting others do their fighting for them. It is not the spirit that gives the self-respect that most men like to have of doing his part.

"I would like to see the entire electrical industry in this state working as a unit for reasonable but not radical results. The central stations, the jobbers and retail dealers, the contractors and the electricians, they are all dependent upon the use and increasing use of electric current, and one of the first steps toward a unification of results is a uniform standard of material and a standard of workmanship. Who is there to oppose this standard? Surely not the great power companies. In traveling around I see their marvelous stretches of high-tension lines webbing the state and the standard of construction is probably the best that modern practice could devise. You see no sagging wires strung on saplings with cheap insulators, but massive poles treated with preservative, and erected with such care and precision, as to be an inspiration in beholding, as a master contribution to the advancement in harnessing that most wonderful servant of man, electricity. Surely not the central stations, the trend of their distributing construction is ever better and better. Look in our progressive cities and towns, see the neat lines, the improvement in street lighting, and the beautiful white ways, the trend toward placing their wires underground, the massive power houses, the standardization of voltage for light and power, everything for maximum life endurance and efficiency and minimum cost.

"Surely not the manufacturers and supply dealers who have reduced the handling and distributing of electrical supplies to a science and have, it may be confidentially stated, almost reduced competition to a minimum without impairing the life of trade. In fact, the reverse is true, that by keeping the wholesale trade units on a solid basis and discouraging irresponsibles they have benefited the electrical industry and kept prices as low as is consistent with sound business.

"All this is consistent with the idea that in standardization is the utmost economy and efficiency, service and upkeep is simplified and improvements more readily put into effect as a whole."

In the discussion of the proposed state bill Cecil Graham of Jacksonville gave a history of the inception and drafting of the act and answered many questions concerning the features of the measure. T. E. Satchwell, chairman of the legislative committee, explained the difficulty of drafting a bill that would please everybody. He spoke of the objections and objectors to the bill, and explained the work that is necessary to have it properly presented and represented at the state capital. William J. Tighe, field representative of the A. E. I., who toured the state in the interest of the association, also addressed the meeting.

OBITUARY

Charles William Holtzer

Charles William Holtzer, founder and chairman of the board of the Holtzer-Cabot Electric Company, Boston, died recently at his home in Brookline, Mass. Mr. Holtzer was born in Germany and came to this country in 1866. For a time he carried on experimental work and engaged in other activities in the electrical field, and in 1875 entered the electrical manufacturing business, specializing in communication equipment. In 1889 the Holtzer-Cabot Electric Company was formed, and its field was widened to take in motors, signal equipment and other specialties.

Washington Devereux

Washington Devereux, supervising engineer of the Philadelphia Fire Underwriters' Association, died April 18 at his home in Philadelphia. In 1890 he became affiliated with the Underwriters' Association after ten years in the telephone field, and successively held the positions of inspector of the electrical department, chief inspector and supervising engineer, which place

Washington Devereux

he assumed in June, 1926. Mr. Devereux was a Philadelphian by birth and was graduated from Girard College, that city. He was the author of the "Electrical Key," the standard work for use of the Electrical Inspection Bureau and was active in discussions of the regulations and interpretations of the National Electrical Code. He was a member of the American Institute of Electrical Engineers, Illuminating Engineering Society, National Fire Protection Association, American Electrochemical Society and the Philadelphia Engineers Club. He was 63 years old.

LeRoy Clark

LeRoy Clark, president of the Safety Cable Company, 114 Liberty Street, New York, died suddenly on April 18 at Falmouth, Mass. He had been connected with the Safety organization for thirty years, and during the war served as chief of the wire and cable section of the War Industries Board, in which capacity he had charge of the distribution of the wire and cable orders of the Government.

In 1925 the Safety company took over the properties of the Phillips Wire Company of Pawtucket, R. I., and the A-A Wire Company of Harrison, N. J., and just previous to Mr. Clark's death announcement was made of the acquisition of the American Insulated Wire and Cable Company and the Brenner-Mervis Company, both of Chicago.

Mr. Clark was active in association work and devoted considerable of his time to such activities.

News Notes Concerning Contractor-Dealers

Miller-Liskey Electric Company, Hagerstown, Md., is to open an electric store at 31 East Franklin Street, that city.

The Harrison Electric Company, Indianapolis, Ind., has moved from its old location at 3634 Roosevelt Avenue to 2612 Brookway Drive, that city.

G. A. Estep & Son have opened a new electrical store in the Washington Hotel Building, Toppenish, Wash.

Hirst's Electrical Shop is a new enterprise located at 2303 Third Avenue, North, Birmingham, Ala. J. Hirst, the owner, is a graduate electrical engineer from the University of California, and previous to opening the new store was in the central station field.

A new business under the name of Southwestern Michigan Electric Shop has opened at St. Joseph, Mich., under the management of F. N. Steuland, who was formerly in the electrical contracting business in Chicago. The store has been completely renovated and modernized.

Farley Electric Company, Winterhaven, Fla., has moved into its new home on North Third Street and Pine Avenue, that city. This organization has been opened a little more than one year and has found it necessary to have larger quarters. The new location was built for the company.

The Ernst Brothers, electrical contractors, have moved into new quarters in Ann Arbor, Mich., marking their fourth move into more commodious space in the seven years they have been in business. A complete line of appliances is now carried.

The store and stock of Sea & Guilford, contractors, Willimantic, Conn., were damaged by a fire which gutted the building in which their business was situated. The total loss was estimated at $50,000, of which the electrical men suffered a loss of $2,000.

Hershey Electric Company, Wheeling, W. Va., will move to new quarters in this city as soon as necessary alterations are made at their new location, which will be in the Kerr Building.

The store and stock of the Bigley Electric Company, 227 North Main Street, Findlay, Ohio, was recently damaged by fire, a $1,000 loss resulting. Most of the loss was confined to lighting fixtures, which were damaged by smoke and chemicals. The company was to have moved to a new location a few days after the blaze.

B. F. Darnell and C. E. White have opened the Darnell Electric Shop at 5518 Atlantic Avenue, North Long Beach, Cal. Mr. Darnell is owner of electric shops at Downey and Hollydale as well.

Augustus LaPlan, contractor-dealer of Glens Falls, N. Y., will soon open a branch store in Chestertown, N. Y., a nearby town.

New Electragists

The following contractor-dealers have made application and been accepted into the A. E. I. since the publication of the last list in the April issue:

FLORIDA

Tampa:
Bell Electric Co.

ILLINOIS

Peoria:
Crawley Electric Co.

INDIANA

Fort Wayne:
P. F. Arnold Co.
City of Fort Wayne, Insp. Dept.
Dix-Kelly Elec. Shop
K. M. Elec. Co.

Shelbyville:
Niles Kanouse

LOUISIANA

New Orleans:
George P. Caire
Freeman-Barlow, Inc.
Globe Elec. Co.
Haro & Wetzel
Howard J. Jones
Hartwell Ltg. Fix. Co., Inc.
"Irish" Levy Elec. Co., Inc.
Oscar Zachary Levy
C. J. Lincoln Elec. Co.
Marine Elecl. Wks., Inc.
Aleck Mattes
Fred Perrin
Richardson Elec. Co.
H. Schill

MARYLAND

Baltimore:
John P. O'Brien
Le Roy Robins

MASSACHUSETTS

Boston:
Anderson-Coffey Co.
A. J. Wolfe Co.

Lowell:
Arthur V. Pyer

Lynn:
Hall Elecl. Co., Inc.

MICHIGAN

Flint:
Flint Elec. Co.
J. E. Sills Elec. Co.
Trimble Elec. Co.

Grand Rapids:
East End Elec. Co.
Zeilstra Elec. Co.

NEW JERSEY

Jersey City:
Frank V. Bremer

NEW YORK

Avon:
Harry V. Light

NORTH CAROLINA

Wilmington:
A. B. Blake

OHIO

Akron:
Fox Elec. Co.
John R. Ramsay
Fred Riggs

Lima:
Lima Armature Works

Painesville:
Glenn C. Mohney

RHODE ISLAND

Central Falls:
Pariseau Bros.

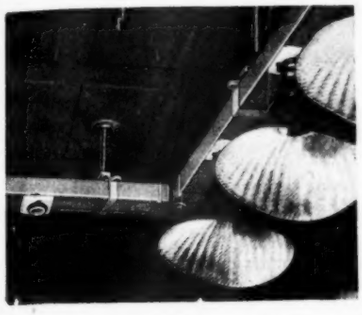
Providence:
Elec. Maint. & Equip. Co.

Riverside:
Riverside Elec. Shop

News of the Manufacturers

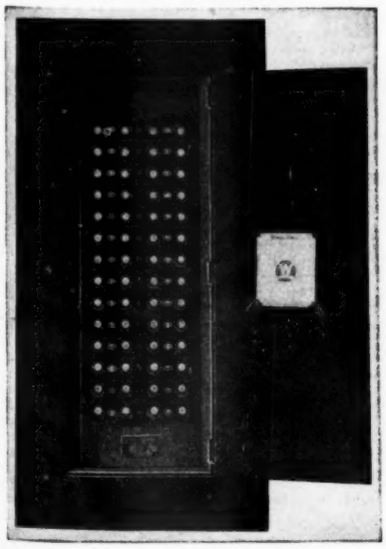
Wiring Device

Curtis Lighting, Inc., 1119 West Jackson Boulevard, Chicago, has placed on the market under the trade name "CurtiStrip" a wireway constructed of 20-gauge steel arranged to hold "X-Raylet" reflectors made by the same manufacturer. It is designed for show-window and cover lighting. Ease of installation is one of the claims made for it. The cover is easily snapped into place in the spring-like groove provided in the channel, and both channel section and cover are supplied in 10-ft. lengths. The new wireway is 2½ in. wide, 1⅝ in. deep and sturdy in construction. It is adaptable to any type of installation and the receptacles are porcelain.



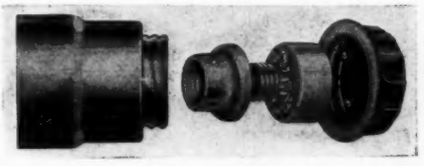
Plug-fuse Type Panelboard

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has introduced two types of panelboards (JF and NJF) of the plug-fuse type for use in apartments, hospitals, hotels and office buildings. The small size and compactness of design as well as ease of installation are featured. They are of the full-safety type and are built up of individual sections of black moulded composition. Each section consists of eight plug-fuse receptacles arranged for four circuits, double-fusing type, JF; or for eight circuits, single-fusing type, NJF. Main switches are of the rotary-brush contact type with quick-break mechanism breaking the current at two points. The handle of the switch is mounted on a cast faceplate.



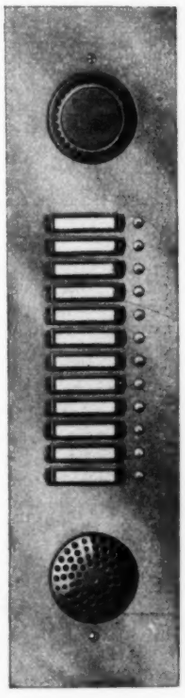
Socket

Wheeler Reflector Company, 275 Congress Street, Boston, Mass., announces a new socket under the trade name "Durex" which will be used in all Durex assemblies for medium base lamps henceforth. According to manufacturer, the new socket embodies two new principles in socket construction, it is fastened to the canopy by screws fitting into bayonet holes, making removal and replacement a simple matter and secondly the porcelain socket shell screws on and off the cap easily, exposing the contact screws for ready wiring.



Apartment Telephone System

Dictograph Products Corporation, 220 West Forty-second Street, New York, has brought out an apartment house telephone system. The vestibule equipment is of the cordless loud-speaker type, which prevents interruption of service because of loss of the receiver or breaking of hook. There is no mouthpiece on the vestibule panel, thus doing away with another possible source of trouble, according to the manufacturer. The party is called by pressing a button and the instrument is said to be capable of picking up the speaker's voice from a distance of several inches. The answer is received through the loud speaker. The vestibule plates are furnished in heavy gauge brass with a brushed finish, but other finishes are available if desired. The suite instruments are provided both for surface and flush mounting. They are self-contained, the bell being installed inside the cabinet.

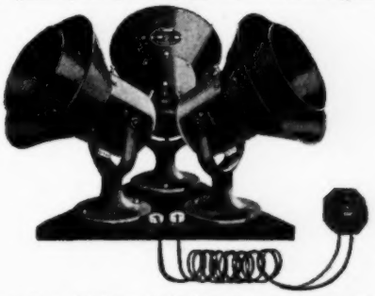


Conduit Bushing

Cleveland Wrought Products Company, Cleveland, Ohio, has placed on the market a conduit bushing for which unusual corrosion-resisting properties are claimed. These bushings are cadmium plated instead of being galvanized or enameled, and as a result of this, according to the manufacturer, they will remain unaffected under conditions which would speedily destroy galvanizing.

Siren

Federal Electric Company, 8700 South State Street, Chicago, has placed on the market a siren, known as the "Triple-A," designed for use as a fire alarm in villages, schools, industrial plants, etc., and also as a work signal. It consists of three individual sirens mounted on a triangular base, all connected in parallel and operating from one switch. Each siren has a different tone and under normal conditions they can be heard within a radius of a half mile. The new siren is simple in construction, totally enclosed and weighs forty pounds. The motor-housings, stators and rotors are aluminum die-cast.



Appliance Control Plug

Thermo Electric Device Company, 215 South Fifth Street, Philadelphia, Pa., has brought out an appliance plug fitted with a heat regulator. The heat is adjusted by means of a small dial on the plug and can be set at medium and high heat and intermediate temperatures. The plug is made of bakelite and is designed for operation on 110-volt lighting circuits. It is rated at 660 watts.

Conduit Protector

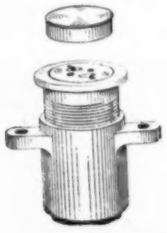
Enameled Metals Company, Pittsburgh, Pa., announces another improvement in the thread protector for its enameled conduit. In the new protector the metal fits snug and uniform over practically the entire thread and protects the pipe end as well. A heavy

fibre lining absorbs jars and dents, according to the manufacturer. Three lugs from the

metal caps engage the threads, holding the protector securely yet allowing it to be readily twirled off when desired.

Small Floor Receptacle

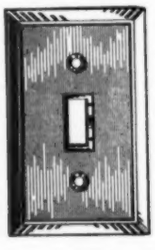
Fullman Manufacturing Company, Latrobe, Pa., has brought out a residence-type midget floor receptacle and box designed to afford an extremely small convenience outlet with



low installation cost. The new receptacle is two inches in diameter and according to the manufacturer can be installed in less than fifteen minutes. The box is adjustable to suit varying thicknesses of wood floors.

Toggle Switch Plate

In addition to the line of molded bakelite push button switch plates illustrated in the March issue of THE ELECTRAGIST, George Richards & Co., 557 West Monroe Street,



Chicago, has brought out one designed for use with toggle switches. It comes in from one to four gangs, and is marketed under the trade name "Hemco."

Bed Lighting Fixture

The F. W. Wakefield Brass Company, Vermilion, Ohio, has brought out a lighting fixture designed to be attached to the head of the bed. It is the first of a line of fixtures for hotel service which the Wakefield com-

pany intends to introduce. The new fixture is made of extra heavy gauge metal, is sturdy in construction and bolts to the head of a bed. The reflecting surface is matt aluminum, and the exterior finish is of bank bronze.

Manufacturing Notes

Acme Electric Heating Company, 1207 Washington Street, Boston, Mass., has published a new catalogue, known as Series C, which contains valuable information in the electric heating and resistance field.

The Berma Appliance Corporation, Paul C. Bandy, president, has been formed, with executive offices at 17 North Wabash Avenue, Chicago, Ill. The company will manufacture household electric heating devices, ranges and kindred appliances. A branch office is to be opened in New York.

Chicago Fuse Manufacturing Company, Chicago, Ill., announces the appointment of W. A. Wilcox as St. Louis district sales manager. He will have charge of sales over Southern Illinois, Eastern Missouri, Western Tennessee, Mississippi, Arkansas and Louisiana. Prior to his appointment Mr. Wilcox was associated with the Economy Fuse and Manufacturing Company of Chicago for more than eight years.

W. A. Wilcox

Appleton Electric Company, 1701 Wellington Avenue, Chicago, has purchased the complete foundry, equipment and land owned by the Stowell Company of South Milwaukee, Wis., and is operating it as plant No. 2 under the name of Wisconsin Appleton Company.

Franklin Pottery Company, Lansdale, Pa., has announced an increase in its capital stock which doubles it and brings it above $500,000. The purpose of the increase was to provide additional working capital and for a business-expansion program which is contemplated.

Roy V. Hawkins has left the Central Electric Supply Company, St. Louis, Mo., and has been appointed district manager of the Appleton Electric Company, Chicago.

"Outline of Office Lighting Practice" is the title of a semi-technical bulletin just issued by the F. W. Wakefield Brass Company of Vermilion, Ohio.

Inland Glass Manufacturing Company, Chicago, has appointed Weir, Smith & Co., of New York City, its eastern representatives, with offices at 58 Warren Street. They also represent R. Williamson & Co., and the Quadrangle Manufacturing Company, both of Chicago, Ill.

The New York representatives of the Trico Fuse Company, Baitinger Electric Company, has moved to new quarters at 95 Chambers Street.

Moe-Bridges Company, Milwaukee, Wis., announces that it is now engaged in the manufacture of illuminating glassware, having recently acquired a factory in Chicago which will be devoted to the production of a variety of styles.

Safety Cable Company, 114 Liberty Street, New York, has acquired the properties of the American Insulated Wire & Cable Company and the Brenner-Mervis Company, both of Chicago. The former organization manufactures weatherproof copper wire, bare copper wire and magnet wire, while the products of the Brenner-Mervis Company are copper rods and wire.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, of "THE ELECTRAGIST," published monthly at Utica, N. Y., for April 1, 1927:

State of New York, }
County of New York, }ss.:

Before me, a Notary Public in and for the State and County aforesaid, personally appeared S. B. Williams, who having been duly sworn according to law, deposes and says that he is the Editor of "THE ELECTRAGIST," and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Association of Electragists—International, 15 W. 37th Street, New York, N. Y.
Editor, S. B. Williams, 15 W. 37th Street, New York, N. Y.
Managing Editor, none.
Business Manager, Laurence W. Davis, 15 W. 37th Street, New York, N. Y.

2. That the owner is:

Association of Electragists—International. Not incorporated. Composed of 2,000 members, of which principal officers are:

Clyde L. Chamblin, 687 Mission Street, San Francisco, Cal.
Laurence W. Davis, Secretary-Treasurer, 15 W. 37th Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent. or more of total amount of bonds, mortgages, or other securities are: none.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the Company, but also, in cases where the stockholder or security holder appears upon the books of the Company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signature of) S. B. WILLIAMS,
Editor.

Sworn to and subscribed before me this 22nd day of March, 1927.

MAY E. CASLIN.

(My commission expires March 30, 1928).